



COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
<http://dpw.lacounty.gov>

GAIL FARBER, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

June 19, 2012

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012

Dear Supervisors:

ADOPTED

BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES

49 June 21, 2012

Sachi A. Hamai
SACHI A. HAMAI
EXECUTIVE OFFICER

**SPREADING GROUNDS TELEMETRY SYSTEM UPGRADE
(SUPERVISORIAL DISTRICTS 1, 4, AND 5)
(3 VOTES)**

**CIO RECOMMENDATION: APPROVE (X) APPROVE WITH MODIFICATION ()
DISAPPROVE ()**

SUBJECT

This action is to enter into a contract with Tetra Tech, Inc., for the Spreading Grounds Telemetry System Upgrade. The project will upgrade, install, connect, and configure telemetry systems at groundwater recharge facilities located in the Cities of Azusa, Bell Gardens, Glendora, and Pico Rivera.

IT IS RECOMMENDED THAT YOUR BOARD ACTING AS THE GOVERNING BODY OF THE LOS ANGELES COUNTY FLOOD CONTROL DISTRICT:

1. Find that this project is categorically exempt from the provisions of the California Environmental Quality Act.
2. Award and delegate authority to the Chief Engineer of the Los Angeles County Flood Control District or her designee to enter into a contract with Tetra Tech, Inc., for the Spreading Grounds Telemetry System Upgrade for a contract amount of \$750,000. This contract will be for the term of one year commencing upon execution by both parties, with a one-year renewal option, not to exceed a potential maximum contract term of two years.

3. Delegate authority to the Chief Engineer of the Los Angeles County Flood Control District or her designee to extend the contract duration for a warranty period, execute change orders for unforeseen additional work within the scope of the contract, use contingency funds, and cancel or terminate the contract if it is in the best interest of the County to do so.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of the recommended actions is to upgrade, install, connect, and configure existing telemetry systems at groundwater recharge facilities (spreading grounds). The required work for the Spreading Grounds Telemetry System Upgrade (SGTS) includes replacing the Geomation Measurement and Control Units (MCUs) with Programmable Logic Controllers (PLCs) and appurtenances, which are an industry standard. Additionally, the project will replace out-of-date software with a modern, industry standard Graphical User Interface (GUI) and database. The completed SGTS will provide the Department of Public Works (Public Works) with both local and remote monitoring and control capabilities, and facilitate the transmission of data in real time to improve the operational efficiency of the spreading grounds.

Implementation of Strategic Plan Goals

The Countywide Strategic Plan directs the provisions of Operational Effectiveness (Goal 1) and Fiscal Sustainability (Goal 2). The recommended actions will help achieve these goals by improving the operational efficiency of the County spreading grounds, thus increasing the amount of water conserved.

FISCAL IMPACT/FINANCING

There will be no impact to the County General Fund.

The estimated cost to complete this project is \$900,000. The total project cost includes \$750,000 in contract costs, which includes \$68,000 for contingencies that may arise as the work progresses; and \$150,000 for in-house contract administration, project management, and inspection costs. Sufficient funds are available in the Fiscal Year 2011-12 Flood Control District Fund Budget.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

Tetra Tech, Inc., located in Irvine, California, is the recommended consultant. This contract will commence on the date stipulated in the Notice to Proceed for a period of one year. Upon final acceptance of the installation work, the Chief Engineer or her designee will extend the contract duration, at no additional cost, for a one-year warranty period, not to exceed a potential maximum contract term of two years.

A contract approved as to form by County Counsel (Enclosure A) will be used. The Chief Information Office (CIO) Analysis, prepared by the County CIO, is enclosed for your review (Enclosure B). The recommended contract was solicited on an open-competitive basis and is in accordance with the applicable Federal, State, and County requirements. The consultant is in compliance with the requirements of the Chief Executive Officer and your Board.

The required work to be performed under the consultant service agreement includes replacing the MCUs with PLCs and appurtenances, which are an industry standard; replacing the out-of-date

software with a modern, industry standard GUI and database; installation of cables, instrumentation, and sensors within the existing facilities; and a one-year warranty from the date of Public Works' final acceptance to ensure that all instrumentation and system components are properly functioning.

In addition, the consultant may be called upon to perform as-needed trouble shooting services and/or repairs to the facilities such as wiring, conduits, water level sensors, gate position sensors, battery power sensors, and any other existing appurtenances that are used with the upgraded telemetry system.

The award of the contract will not result in unauthorized disclosure of confidential information and will be in full compliance with Federal, State, and County regulations. The contract contains terms and conditions supporting your Board's ordinances, policies, and programs including, but not limited to: County's Greater Avenues for Independence (GAIN) and General Relief Opportunities for Work (GROW) Programs, Board Policy No. 5.050; Contract Language to Assist in Placement of Displaced County Workers, Board Policy No. 5.110; Reporting of Improper Solicitations, Board Policy No. 5.060; Notice to Contract Employees of Newborn Abandonment Law (Safely Surrendered Baby Law), Board Policy No. 5.135; Contractor Employee Jury Service Program, Los Angeles County Code, Chapter 2.203; Notice to Employees Regarding the Federal Earned Income Credit (Federal Income Tax Law, Internal Revenue Service Notice 1015); Contractor Responsibility and Debarment, Los Angeles County Code, Chapter 2.202; Los Angeles County's Child Support Compliance Program, Los Angeles County Code, Chapter 2.200; Defaulted Property Tax Reduction Program Ordinance, Los Angeles County Code, Chapter 2.206; and the standard Board-directed clauses that provide for contract termination or renegotiation.

Proof of the required Professional Liability insurance, and Comprehensive General and Automobile Liability insurance policies, naming the County as additional insured, and evidence of Workers' Compensation insurance will be obtained from the consultant before any work is assigned.

ENVIRONMENTAL DOCUMENTATION

This project is categorically exempt from the provisions of the California Environmental Quality Act pursuant to Section 15301(b), Class 1, Subsection (e), of the revised County Environmental Reporting Procedures and Guidelines adopted by your Board on November 17, 1987.

CONTRACTING PROCESS

On November 21, 2011, Public Works, acting on behalf of the Los Angeles County Flood Control District, issued a Request for Proposals (RFP). Records indicate that five firms downloaded the RFP from the County website. Two firms responded to the RFP. An evaluation committee, comprised of Public Works staff, evaluated the proposals and determined that Tetra Tech, Inc., was the most-qualified and responsible consultant for this project. The evaluation was based on technical expertise, proposed work plan, experience, personnel qualifications, and understanding of the work requirements. The evaluation was completed without regard to race, creed, color, or gender.

As requested by your Board on February 3, 1998, this contract opportunity was listed on the County's "Doing Business with Us" Website. A copy is enclosed for your reference (Enclosure C).

Participation by Community Business Enterprises (CBE) in the project is encouraged through Public Works' CBE Outreach Program and the requirement that consultants demonstrate their good faith

efforts to utilize CBEs. Tetra Tech, Inc., is aware of Public Works' CBE Outreach Program and its proposed CBE participation is on file with Public Works.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

The implementation of this project will increase efficiency in spreading grounds operations, and enable Public Works to maximize the recharge of imported, recycled, and stormwater into the aquifer system.

CONCLUSION

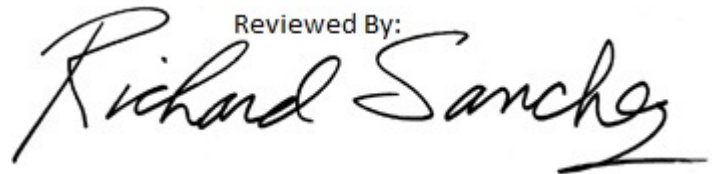
Please return one adopted copy of this letter to the Department of Public Works, Water Resources Division.

Respectfully submitted,



GAIL FARBER

Director

Reviewed By:


RICHARD SANCHEZ

Chief Information Officer

GF:CS:yg

Enclosures

c: Chief Executive Office (Rita Robinson)
Chief Information Office (Eric Sasaki)
County Counsel
Executive Office
Department of Public Social Services
(GAIN/GROW Program)

ENCLOSURE A

ENCLOSURE A

AGREEMENT FOR CONSULTANT SERVICES

THIS AGREEMENT, made and entered into this _____ day of _____, 2012.

BY AND BETWEEN

COUNTY OF LOS ANGELES, a body corporate
and politic, hereinafter referred to as COUNTY,

AND

NAME OF CONSULTANT,
hereinafter referred to as Consultant,

COUNTY has determined that it is a matter of public convenience and necessity to engage the specialized services of a Consultant to provide type of service – project name-specs. no.

Consultant is a firm of recognized professionals with extensive experience and training in its specialized field. In rendering these services, Consultant shall, at a minimum, exercise the ordinary care and skill expected of the average practitioner in Consultant's profession acting under similar circumstances. The work will involve the performance of professional, expert, and/or technical services of a temporary or part-time duration; and

The parties hereto do mutually agree as follows:

1. Definition

COUNTY means either COUNTY; COUNTY, as agent for such joint powers authority or nonprofit corporation as may be involved in the issuance of bonds, certificates of participation, or other evidences of indebtedness to finance the work contemplated herein; or said joint powers authority or nonprofit corporation.

2. Consultant's Services

The scope of work shall be as outlined in the Attachment dated month-day, 2XXX. No work shall commence on this project until a written Notice to Proceed is issued by COUNTY. COUNTY does not guarantee or promise that any work will be assigned to Consultant under this contract until a written Notice to Proceed is issued by the COUNTY.

3. Consideration

In consideration of the performance by Consultant in a manner satisfactory to COUNTY of the services described in Article 2 above, including receipt and acceptance of such work by Director of the COUNTY of Los Angeles Department of Public Works (hereinafter called Director), COUNTY agrees to pay Consultant a maximum not to exceed fee of amount in words Dollars (\$ amount in figures).

COUNTY shall compensate Consultant as follows:

- a. Monthly payments for the work accomplished shall be made upon verification and acceptance of such work by Director, as stated in the Attachment dated date, 2XXX, up to a maximum of \$amount. Monthly invoices shall be accompanied by an analysis of work completed for the invoice period. This analysis shall be prepared in a format satisfactory to Director.
- b. Supplemental Consultant Services may be required at COUNTY'S discretion, upon prior written authorization by Director, and will be based on Consultant's fee schedule on file with Director.
- c. In the event that budget reductions occur in any fiscal year covered by this AGREEMENT that may cause COUNTY to consider terminating this AGREEMENT, the COUNTY may attempt to renegotiate the terms of this AGREEMENT to reduce the cost thereof in lieu of termination under the termination provisions of the CONTRACT.
- d. All funds for payment of services rendered after June 30 of the current fiscal year are subject to COUNTY'S legislative appropriation for this purpose. Payments for services following June 30 of each fiscal year are dependent upon the same action. Notwithstanding any other provision of this AGREEMENT, COUNTY shall not be obligated for Consultant's performance hereunder or by any provision of this AGREEMENT during any of COUNTY'S future fiscal years unless and until COUNTY'S Board of Supervisors appropriates funds for this AGREEMENT in COUNTY'S budget for each future fiscal year, and in the event that funds are not appropriated for this AGREEMENT, this AGREEMENT shall terminate as of June 30 of the last fiscal year for which funds were appropriated. COUNTY shall notify Consultant in writing of such nonappropriation of funds at the earliest possible date.
- e. Consultant will not be required to perform services which will exceed the CONTRACT amount, scope of work, and CONTRACT dates

without amendment to this AGREEMENT.

Consultant will not proceed with additional services without prior written authorization. Consultant will not be paid for any expenditures beyond the CONTRACT amount stipulated without amendment to this AGREEMENT.

- f. Consultant will notify COUNTY when CONTRACT amount has been incurred up to 75% of the CONTRACT total.

4. Equipment and Supplies

Consultant agrees to furnish all necessary equipment and supplies used in the performance of the aforementioned services at Consultant's sole cost and expense.

5. COUNTY'S Responsibility

COUNTY will make available drawings, specifications, and other records as available in COUNTY Department of Public Works' file. Notwithstanding the foregoing, COUNTY does not represent the accuracy of the content of said materials.

6. COUNTY'S Representative

Director or authorized representative, shall represent COUNTY in all matters pertaining to the services to be rendered pursuant to this AGREEMENT.

7. Term and Termination

The term of this AGREEMENT shall commence on the date of the first Notice to Proceed, and unless otherwise modified, shall terminate on the date that the work is accepted by COUNTY. COUNTY may, at its sole option and discretion, cancel or terminate this AGREEMENT, without any liability other than payment for work already performed, up to the date of termination by giving three days written notice of such termination to Consultant. Consultant shall be paid the reasonable value of its services rendered. In the event of any such termination by COUNTY, Consultant shall provide to COUNTY a termination report consisting of all drawings, specifications, reports, and data accumulated to the date of such termination in a form capable of assimilation for use by COUNTY.

8. Ownership of COUNTY Materials

- a. Consultant and COUNTY agree that all materials, including but not limited to, designs, specifications, techniques, plans, reports, deliverables, data,

photographs, diagrams, maps, images, graphics, text, videos, advertising, software, source codes, website plans and designs, interactive media, drafts, working papers, outlines, sketches, summaries, edited and/or unedited versions of deliverables, and any other materials or information developed under this AGREEMENT and any and all Intellectual Property rights to these materials, including any copyrights, trademarks, service marks, trade secrets, trade names, unpatented inventions, patent applications, patents, design rights, domain name rights, know-how, and any other proprietary rights and derivatives thereof, is and/or shall be the sole property of COUNTY (hereafter collectively, "COUNTY Materials"). Consultant hereby assigns and transfers to COUNTY all Consultant's right, title and interest in and to all such COUNTY Materials developed under this AGREEMENT.

Notwithstanding such COUNTY ownership in the COUNTY Materials, Consultant may retain possession of working papers and materials prepared by Consultant under this CONTRACT. During and for a minimum of five years subsequent to the term of this CONTRACT, COUNTY shall have the right to inspect any and all such working papers and materials, make copies thereof and use the working papers and materials and the information contained therein.

b. Consultant shall execute all documents requested by COUNTY and shall perform all other acts requested by COUNTY to assign and transfer to, and vest in COUNTY, all Consultant's right, title and interest in and to the COUNTY Materials, including, but not limited to, any and all copyrights, trademarks, service marks, trade names, unpatented inventions, patent applications, patents, design rights, domain name rights, know-how, and any other proprietary rights and derivatives thereof resulting from this CONTRACT. COUNTY shall have the right to register all applicable copyrights, trademarks and patents in the name of the COUNTY of Los Angeles. Further, COUNTY shall have the right to assign, license, or otherwise transfer any and all COUNTY'S rights, title and interest, including, but not limited to copyrights, trademarks, and patents, in and to the COUNTY Materials.

c. Consultant represents and warrants that the COUNTY Materials prepared herein under this AGREEMENT, is the original work of Consultant and does not infringe upon any Intellectual Property or proprietary rights of third parties. For those portions of the COUNTY Materials that are not the original work of Consultant, Consultant represents and warrants that it has secured all appropriate licenses, rights, and/or permission from appropriate third parties to include such materials in the COUNTY Materials.

Consultant shall defend, indemnify and hold COUNTY harmless against any claims by third parties based on infringement of copyright, patent, trade secret, trademark, or any other claimed Intellectual Property or proprietary right, arising from COUNTY'S use of COUNTY Materials created and/or prepared by Consultant. Consultant will also indemnify and defend at its sole expense, any action brought against COUNTY based on a

claim that COUNTY Materials furnished hereunder by Consultant and used within the scope of this AGREEMENT infringe any copyright, patent, trade secret, trademark, or any other claimed intellectual property or proprietary right of third parties, and Consultant will pay any costs, damages and attorney's fees incurred by COUNTY. COUNTY will notify Consultant promptly and in writing of any such action or claim and will permit Consultant to fully participate in the defense thereof.

d. Consultant shall affix the following notice to all COUNTY Materials: "© Copyright 2007 (or such other appropriate date of first publication), COUNTY of Los Angeles. All Rights Reserved." Consultant shall affix such notice on the title page of all images, photographs, documents and writings, and otherwise as COUNTY may direct.

e. COUNTY shall also have the sole right to control the preparation, modification, and revisions to, all acknowledgment and/or attribution language for all COUNTY Materials resulting from this AGREEMENT. COUNTY will however, honor requests by Consultant seeking removal of all acknowledgment and/or attribution language relating to the Consultant, should Consultant no longer wish to receive attribution for its work on the COUNTY Materials.

f. If directed to do so by COUNTY, Consultant will place the COUNTY name and COUNTY logo on COUNTY Materials developed under this AGREEMENT. Consultant may not however, use the COUNTY name and COUNTY logo on any other materials prepared or developed by Consultant that falls outside the scope of this AGREEMENT.

9. Indemnification and Insurance

Two alternative Indemnification and Insurance Provisions are set forth in Attachments 2 and 3 of this AGREEMENT.

Consultant has selected one of the two alternative Indemnification and Insurance Provisions and has indicated its selection by initialing the selected alternative as follows:

Alternative 1 _____ Alternative 2 _____

10. Anti-Discrimination

The following provisions are required by Section 4.32.010 et seq. of the Los Angeles COUNTY Code:

Consultant certifies and agrees that all persons employed by Consultant, its affiliates, subsidiaries, or holding companies are, and will be, treated equally by Consultant

without regard to or because of race, religion, ancestry, national origin, or sex, and in compliance with state and Federal anti-discrimination laws. Consultant further certifies and agrees that it will deal with its subconsultants, bidders, and vendors without regard to or because of race, religion, ancestry, national origin, or sex. Consultant agrees to allow access to its employment records during regular business hours to verify compliance with the foregoing provisions when so requested by COUNTY.

Consultant specifically recognizes and agrees that if COUNTY finds that any of the foregoing provisions have been violated, the same shall constitute a material breach of CONTRACT upon which COUNTY may determine to cancel, terminate, or suspend the CONTRACT. While COUNTY reserves the right to determine individually that the anti-discrimination provision of the CONTRACTS have been violated, in addition, a determination by the California Fair Employment Practices Commission or the Federal Equal Employment Opportunity Commission that Consultant has violated state or Federal anti-discrimination laws shall constitute a finding by COUNTY that Consultant has violated the anti-discrimination provisions of the CONTRACT.

At its option, and in lieu of canceling, terminating, or suspending the CONTRACT, COUNTY may impose damages for any violation of the anti-discrimination provisions of this paragraph, in the amount of Two Hundred Dollars (\$200) for each violation found and determined. COUNTY and Consultant specifically agree that the aforesaid amount shall be imposed as liquidated damages, and not as a forfeiture or penalty. It is further specifically agreed that the aforesaid amount is presumed to be the amount of damages sustained by reason of any such violation, because from the circumstances and the nature of the violation, it is impracticable and extremely difficult to fix actual damages.

11. Independent Contractor Status

This AGREEMENT is by and between COUNTY of Los Angeles and Consultant and is not intended, and shall not be construed, to create the relationship of agent, servant, employee, partnership, joint venture, or association, as between COUNTY and Consultant.

Consultant understands and agrees that all persons furnishing services to COUNTY pursuant to this AGREEMENT are, for purposes of Workers' Compensation liability, employees solely of Consultant and not of COUNTY.

Consultant shall bear the sole responsibility and liability for furnishing workers' compensation benefits to any person for injuries arising from, or connected with, services performed on behalf of Consultant pursuant to this AGREEMENT.

12. COUNTY'S Quality Assurance Plan

COUNTY, or its agent, will evaluate Consultant's performance under this AGREEMENT on not less than an annual basis. Such evaluation will include assessing Consultant's compliance with all CONTRACT terms and performance standards. Consultant deficiencies which COUNTY determines are severe or continuing, and that may place performance of the AGREEMENT in jeopardy if not corrected, will be reported to the Board of Supervisors. The report will include improvement/corrective action measures taken by COUNTY and Consultant. If improvement does not occur consistent with the corrective action measures, COUNTY may terminate this AGREEMENT or impose other penalties as specified in this AGREEMENT.

13. Assignment

This AGREEMENT shall not be assigned without the prior written consent of COUNTY. Any attempt to assign without such consent shall be void and confer no rights on any third parties.

14. Forum Selection

Consultant hereby agrees to submit to the jurisdiction of the courts of the State of California. The exclusive venue of any action brought by Consultant, on Consultant's behalf or on the behalf of any subconsultant, which arises from this AGREEMENT or is concerning or connected with services performed pursuant to this AGREEMENT, shall be deemed to be in the courts of the State of California located in Los Angeles COUNTY, California.

15. Conflict of Interest

No COUNTY employee in a position to influence the award of this AGREEMENT or any competing AGREEMENT, and no spouse or economic dependent of such employee, shall be employed in any capacity by Consultant herein, or have any other direct or indirect financial interest in this AGREEMENT.

16. Prohibition from Involvement in Bidding Process

Consultant understands and agrees that neither it nor its subsidiaries shall be involved in any way in the bidding process on any Request for Proposal developed or prepared by or with the assistance of Consultant's services rendered pursuant to this AGREEMENT, either as a prime Consultant or subconsultant, or as a Consultant to any other prime Consultant or subconsultant. Any such involvement by Consultant shall result in the rejection by the COUNTY of the bid by the prime Consultant in question. •

17. Lobbying

Consultant and each COUNTY lobbyist or COUNTY lobbying firm as defined in Los Angeles COUNTY Code Section 2.160.010, retained by Consultant, shall fully comply with COUNTY Lobbyist Ordinance, Los Angeles COUNTY Code Chapter 2.160. Failure on the part of Consultant or any COUNTY lobbyist or COUNTY lobbying firm retained by Consultant to fully comply with COUNTY Lobbyist Ordinance shall constitute a material breach of this CONTRACT, upon which COUNTY may immediately terminate or suspend this CONTRACT.

18. Gratuities

It is improper for any COUNTY officer, employee, or agent to solicit consideration, in any form, from Consultant with the implication, suggestion, or statement that Consultant's provision of the consideration may secure more favorable treatment for Consultant in the award of the CONTRACT or that Consultant's failure to provide such consideration may negatively affect COUNTY'S consideration of Consultant's submittal. Consultant shall not offer or give, either directly or through an intermediary, consideration, in any form, to a COUNTY officer, employee, or agent for the purpose of securing favorable treatment with respect to the award of the CONTRACT.

Consultant shall immediately report any attempt by a COUNTY officer, employee, or agent to solicit such improper consideration. The report shall be made either to COUNTY manager charged with the supervision of the employee, or to COUNTY Auditor-Controller's Employee Fraud Hotline at (213) 974-0914 or (800) 544-6861. Failure to report such a solicitation may result in Consultant's submittal being eliminated from consideration.

Among other items, such improper consideration may take the form of cash, discounts, service, the provision of travel or entertainment, or tangible gifts.

19. Employment of Laid-Off COUNTY Employees

Should Consultant, or any subconsultant performing more than \$250,000 of the CONTRACT value, require additional or replacement personnel to perform services under this CONTRACT other than the performance of a skilled trade, Consultant shall give first consideration for such employment openings to qualified COUNTY employees who are targeted for layoff or qualified former COUNTY employees who are on a re-employment list.

19. Consultant's Warranty of Adherence to COUNTY'S Child Support Compliance Program

Consultant acknowledges that COUNTY has established a goal of ensuring that all individuals who benefit financially from COUNTY through CONTRACT are in compliance with their court-ordered child, family, and spousal support obligations in order to mitigate the economic burden otherwise imposed upon COUNTY and its taxpayers.

As required by COUNTY'S Child Support Compliance Program (COUNTY Code Chapter 2.200) and without limiting Consultant's duty under this CONTRACT to comply with all applicable provisions of law, Consultant warrants that it is now in compliance and shall during the term of this CONTRACT maintain compliance with employment and wage reporting requirements as required by the Federal Social Security Act (42 USC Section 653a) and California Unemployment Insurance Code Section 1088.5, and shall implement all lawfully served Wage and Earnings Withholding Orders or DISTRICT Attorney Notices of Wage and Earnings Assignment for Child or Spousal Support, pursuant to Code of Civil Procedure Section 706.031 and Family Code Section 5246(b).

Failure of Consultant to maintain compliance with these requirements shall constitute a default by Consultant under this CONTRACT. Without limiting the rights and remedies available to COUNTY under any other provision of this CONTRACT, failure to cure such default within 90 days of notice by the Los Angeles COUNTY Child Support Services Department shall be grounds upon which COUNTY Board of Supervisors may terminate this CONTRACT.

20. Consultant's Acknowledgment of COUNTY'S Commitment to Child Support Enforcement

Consultant acknowledges that COUNTY places a high priority on the enforcement of child support laws and the apprehension of child support evaders. Consultant understands that it is COUNTY'S policy to encourage all COUNTY consultants to voluntarily post COUNTY'S L.A.'s Most Wanted: Delinquent Parents poster in a prominent position at Consultant's place of business. COUNTY'S DISTRICT Attorney will supply Consultant with the poster to be used.

21. Termination for Improper Consideration

COUNTY may, by written notice to Consultant, immediately terminate the right of Consultant to proceed under this AGREEMENT if it is found that consideration, in any form, was offered or given by Consultant, either directly or through an intermediary, to any COUNTY officer, employee, or agent with the intent of securing the AGREEMENT or securing favorable treatment with respect to the award, amendment, or extension of the

AGREEMENT or the making of any determinations with respect to Consultant's performance pursuant to the AGREEMENT. In the event of such termination, COUNTY shall be entitled to pursue the same remedies against Consultant as it could pursue in the event of default by Consultant.

Consultant shall immediately report any attempt by a COUNTY officer or employee to solicit such improper consideration. The report shall be made either to COUNTY manager charged with the supervision of the employee or to COUNTY Auditor-Controller's Employee Fraud Hotline at (213) 974-0914 or (800) 544-6861.

Among other items, such improper consideration may take the form of cash, discounts, service, the provision of travel or entertainment, or tangible gifts.

22. Consideration of GAIN/GROW Program Participants for Employment

Should Consultant require additional or replacement personnel after the effective date of this AGREEMENT, Consultant shall give consideration for any such employment openings to participants in COUNTY'S Department of Public Social Services' Greater Avenues for Independence (GAIN) or General Relief Opportunity for Work (GROW) Program who meet Consultant's minimum qualifications for the open position. COUNTY will refer GAIN/GROW participants by job category to Consultant.

23. Notice to Employees Regarding the Federal Earned Income Credit

Consultant shall notify its employees, and shall require each subconsultant to notify its employees, that they may be eligible for the Federal Earned Income Credit under the Federal income tax laws. Such notice shall be provided in accordance with the requirement set forth in Internal Revenue Service Notice 1015.

24. Reduction of Solid Waste

Consistent with the Board of Supervisors' policy to reduce the amount of solid waste deposited at the COUNTY landfills, the Consultant agrees to use recycled-content paper to the maximum extent possible on the project.

25. COUNTY Rights

The COUNTY may employ, either during or after performance of this CONTRACT, any right of recovery the COUNTY may have against the Consultant by any means it deems appropriate including, but not limited to, set-off, action at law or in equity, withholding, recoupment, or counterclaim. The rights and remedies of the COUNTY under this CONTRACT are in addition to any right or remedy provided by California law.

26. Fair Labor Standards Act

Consultant shall comply with all applicable provisions of the Federal Fair Labor Standards Act, and shall indemnify, defend, and hold harmless COUNTY, its agents, officers, and employees from any and all liability including, but not limited to, wages, overtime pay, liquidated damages, penalties, court costs, and attorneys' fees arising under any wage and hour law including, but not limited to, the Federal Fair Labor Standards Act for services performed by Consultant's employees for which COUNTY may be found jointly or solely liable.

27. Prevailing Wage Requirements

Consultant must comply with all applicable prevailing wage requirements. The subject project is a public work as defined in Section 1720 of the California Labor Code.

28. Employment Eligibility Verification

Consultant warrants that it fully complies with all Federal statutes and regulations regarding employment of aliens and others, and that all its employees performing services hereunder meet the citizenship or alien status requirements contained in Federal statutes and regulations. Consultant shall obtain, from all covered employees performing services hereunder, all verifications and other documentation of employment eligibility status required by Federal statutes and regulations as they currently exist and as they may be hereafter amended. Consultant shall retain such documentation for all covered employees for the period prescribed by law. Consultant shall indemnify, defend, and hold harmless COUNTY, its officers, and employees from employer sanctions and any other liability which may be assessed against Consultant or COUNTY in connection with any alleged violation of Federal statutes or regulations pertaining to the eligibility for employment of persons performing services under this AGREEMENT.

29. Consultant Responsibility and Debarment

a. A responsible Consultant is a Consultant who has demonstrated the attribute of trustworthiness, as well as quality, fitness, capacity, and experience to satisfactorily perform the CONTRACT. It is the COUNTY'S policy to conduct business only with responsible consultants.

b. The Consultant is hereby notified that, in accordance with Chapter 2.202 of the COUNTY Code, if the COUNTY acquires information concerning the performance of the Consultant on this or other CONTRACTS which indicates that the Consultant is not responsible, the COUNTY may, in addition to other remedies provided in the CONTRACT, debar the Consultant from bidding or proposing on, or being awarded, and/or performing work on COUNTY CONTRACTS for a specified period of time, which

generally will not exceed five years but may exceed five years or be permanent if warranted by the circumstances, and terminate any or all existing CONTRACTS the Consultant may have with the COUNTY.

c. The COUNTY may debar a Consultant if the Board of Supervisors finds, in its discretion, that the Consultant has done any of the following: (1) violated a term of a CONTRACT with the COUNTY or a nonprofit corporation created by the COUNTY; (2) committed an act or omission which negatively reflects on the Consultant's quality, fitness or capacity to perform a CONTRACT with the COUNTY, any other public entity, or a nonprofit corporation created by the COUNTY, or engaged in a pattern or practice which negatively reflects on same; (3) committed an act or offense which indicates a lack of business integrity or business honesty, or (4) made or submitted a false claim against the COUNTY or any other public entity.

d. If there is evidence that the Consultant may be subject to debarment, the Department will notify the Consultant in writing of the evidence which is the basis for the proposed debarment and will advise the Consultant of the scheduled date for a debarment hearing before the Contractor Hearing Board.

e. The Contractor Hearing Board will conduct a hearing where evidence on the proposed debarment is presented. The Consultant and/or the Consultant's representative shall be given an opportunity to submit evidence at that hearing. After the hearing, the Contractor Hearing Board shall prepare a tentative proposed decision, which shall contain a recommendation regarding whether the Consultant should be debarred, and, if so, the appropriate length of time of the debarment. The Consultant and the Department shall be provided an opportunity to object to the tentative proposed decision prior to its presentation to the Board of Supervisors.

f. After consideration of any objections, or if no objections are submitted, a record of the hearing, the proposed decision and any other recommendation of the Contractor Hearing Board shall be presented to the Board of Supervisors. The Board of Supervisors shall have the right to modify, deny or adopt the proposed decision and recommendation of the Hearing Board.

g. If the Consultant has been debarred for a period longer than five years, that Consultant may, after the debarment has been in effect for at least five years, submit a written request for review of the debarment determination to reduce the period of debarment or terminate the debarment. The COUNTY may, in its discretion, reduce the period of debarment or terminate the debarment if it finds that the Consultant has adequately demonstrated one or more of the following: (1) elimination of the grounds for which the debarment was imposed; (2) a bona fide change in ownership or management; (3) material evidence discovered after debarment was imposed; or (4) any other reason that is in the best interests of the COUNTY.

h. The Contractor Hearing Board will consider a request for review of a debarment determination only where (1) the Consultant has been debarred for a period longer than five years; (2) the debarment has been in effect for at least five years; and (3)

the request is in writing, states one or more of the grounds for reduction of the debarment period or termination of the debarment, and includes supporting documentation. Upon receiving an appropriate request, the Contractor Hearing Board will provide notice of the hearing on the request. At the hearing, the Contractor Hearing Board shall conduct a hearing where evidence on the proposed reduction of debarment period or termination of debarment is presented. This hearing shall be conducted and the request for review decided by the Contractor Hearing Board pursuant to the same procedures as for a debarment hearing.

The Contractor Hearing Board's proposed decision shall contain a recommendation on the request to reduce the period of debarment or terminate the debarment. The Contractor Hearing Board shall present its proposed decision and recommendation to the Board of Supervisors. The Board of Supervisors shall have the right to modify, deny, or adopt the proposed decision and recommendation of the Contractor Hearing Board.

i. These terms shall also apply to subconsultants of COUNTY Consultants.

30. Compliance with Jury Service Program

This CONTRACT is subject to provisions of the COUNTY'S ordinance entitled Contractor Employee Jury Service (Jury Service Program) as codified in Sections 2.203.010 through 2.203.090 of the Los Angeles COUNTY Code.

a. Unless Consultant has demonstrated to the COUNTY'S satisfaction either that Consultant is not a Consultant as defined under the Jury Service Program (Section 2.203.020 of the COUNTY Code) or that Consultant qualifies for an exception to the Jury Service Program (Section 2.203.070 of the COUNTY Code), Consultant shall have and adhere to a written policy that provides that its Employees shall receive from the Consultant, on an annual basis, no less than five days of regular pay for actual jury service. The policy may provide that Employees deposit any fees received for such jury service with the Consultant or that the Consultant deduct from the Employee's regular pay the fees received for jury service.

b. For purposes of this Section, Consultant means a person, partnership, corporation or other entity which has a CONTRACT with the COUNTY or a subcontract with a COUNTY Consultant and has received or will receive an aggregate sum of \$50,000 or more in any 12-month period under one or more COUNTY CONTRACTS or subcontracts. Employee means any California resident who is a full-time employee of Consultant. Full-time means 40 hours or more worked per week, or a lesser number of hours if: 1) the lesser number is a recognized industry standard as determined by the COUNTY, or 2) Consultant has a long-standing practice that defines the lesser number of hours as full-time. Full-time employees providing short-term, temporary services of 90 days or less within a 12-month period are not considered full-time for purposes of the Jury Service Program. If Consultant uses any subconsultant to perform services for the

COUNTY under the CONTRACT, the subconsultant shall also be subject to the provisions of this Section. The provisions of this Section shall be inserted into any such subcontract AGREEMENT and a copy of the Jury Service Program shall be attached to the AGREEMENT.

c. If Consultant is not required to comply with the Jury Service Program when the CONTRACT commences, Consultant shall have a continuing obligation to review the applicability of its exception status from the Jury Service Program, and Consultant shall immediately notify COUNTY if Consultant at any time either comes within the Jury Service Program's definition of Consultant or if Consultant no longer qualifies for an exception to the Program. In either event, Consultant shall immediately implement a written policy consistent with the Jury Service Program. The COUNTY may also require, at any time during the CONTRACT and at its sole discretion, that Consultant demonstrate to the COUNTY'S satisfaction that Consultant either continues to remain outside the Jury Service Program's definition of Consultant and/or that Consultant continues to qualify for an exception to the Program.

d. Consultant's violation of this Section of the CONTRACT may constitute a material breach of the CONTRACT. In the event of such material breach, COUNTY may, in its sole discretion, terminate the Consultant and/or bar Consultant from the award of future COUNTY CONTRACTS for a period of time consistent with the seriousness of the breach.

31. No Payment for Services Provided Following Expiration/Termination of AGREEMENT

Consultant shall have no claim against COUNTY for payment for any money or reimbursement, of any kind whatsoever, for any service provided by Consultant after the expiration or other termination of this AGREEMENT. Should Consultant receive any such payment it shall immediately notify COUNTY and shall immediately repay all such funds to COUNTY. Payment by COUNTY for services rendered after expiration/termination of this AGREEMENT shall not constitute a waiver of COUNTY'S right to recover such payment from Consultant. This provision shall survive the expiration or other termination of this AGREEMENT.

32. Notice to Employees Regarding the Safely Surrendered Baby Law

The Consultant shall notify and provide to its employees, and shall require each subconsultant to notify and provide to its employees, a fact sheet regarding the Safely Surrendered Baby Law, its implementation in Los Angeles COUNTY, and how to safely surrender a baby. The fact sheet is available on the Internet at www.babysafela.org for printing purposes.

The Consultant acknowledges that the COUNTY places a high priority on the implementation of the Safely Surrendered Baby Law. The Consultant understands that it is the COUNTY'S policy to encourage all COUNTY Consultants to voluntarily post the COUNTY'S, A Safely Surrendered Baby Law poster, in a prominent position at the Consultant's place of business. The COUNTY'S Department of Children and Family Services will supply the Consultant with the poster to be used.

33. Consultant Assignment

a. Consultant shall not assign its rights or delegate its duties under the AGREEMENT, or both, whether in whole or in part, without the prior written consent of COUNTY, in its discretion, and any attempted assignment or delegation without such consent shall be null and void. For purposes of this paragraph, COUNTY consent shall require a written amendment to the AGREEMENT, which is formally approved and executed by the parties. Any payments by COUNTY to any approved delegate or assignee on any claim under the AGREEMENT shall be deductible, at COUNTY'S sole discretion, against the claims which Consultant may have against COUNTY.

b. Shareholders, partners, members, or other equity holders of Consultant may transfer, sell, exchange, assign, or divest themselves of any interest they may have therein. However, in the event any such sale, transfer, exchange, assignment, or divestment is effected in such a way as to give majority control of Consultant to any person(s), corporation, partnership, or legal entity other than the majority controlling interest therein at the time of execution of the AGREEMENT, such disposition is an assignment requiring the prior written consent of COUNTY in accordance with applicable provisions of this AGREEMENT.

c. Any assumption, assignment, delegation, or takeover of any of the Consultant's duties, responsibilities, obligations, or performance of same by any entity other than the Consultant, whether through assignment, subcontract, delegation, merger, buyout, or any other mechanism, with or without consideration for any reason whatsoever without COUNTY'S express prior written approval, shall be a material breach of the AGREEMENT which may result in the termination of the AGREEMENT. In the event of such termination, COUNTY shall be entitled to pursue the same remedies against Consultant as it could pursue in the event of default by Consultant.

34. Contractor's Warranty of Compliance with County's Defaulted Property Tax Reduction Program

Contractor acknowledges that COUNTY has established a goal of ensuring that all individuals and businesses that benefit financially from COUNTY through contract are current in paying their property tax obligations (secured and unsecured roll) in order to mitigate the economic burden otherwise imposed upon COUNTY and its taxpayers.

Unless contractor qualifies for an exemption or exclusion, contractor warrants and certifies that to the best of its knowledge it is now in compliance, and during the term of this contract will maintain compliance, with Los Angeles County Code Chapter. 2.206.

35. Termination for Breach of Warranty to Maintain Compliance with COUNTY'S Defaulted Property Tax Reduction Program

Failure of contractor to maintain compliance with the requirements set forth in "Contractor's Warranty of Compliance with COUNTY'S Defaulted Property Tax Reduction Program" shall constitute default under this contract. Without limiting the rights and remedies available to COUNTY under any other provision of this contract, failure of contractor to cure such default within 10 days of notice shall be grounds upon which COUNTY may terminate this contract and/or pursue debarment of contractor, pursuant to County Code Chapter 2.206.

36. Notices

Any notice required or desired to be given pursuant to this AGREEMENT shall be given in writing and addressed as follows:

COUNTY

CONSULTANT

Department of Public Works
Architectural Engineering Division
CONTRACTS & Operations, 8th Floor
900 South Fremont Avenue
Alhambra, CA 91803
(626) 458-xxxx

The address for notice may be changed by giving notice pursuant to this paragraph.

37. Entire AGREEMENT

This CONTRACT constitutes the entire AGREEMENT between COUNTY and Consultant and may be modified only by further written AGREEMENT between the parties hereto.

IN WITNESS WHEREOF, the COUNTY has, by order of its Board of Supervisors, caused these presents to be subscribed by the Director of the Department of Public Works, and the Consultant has hereunto subscribed its corporate name and affixed its corporate seal by its duly authorized officers the day, month, and year herein first above written.

COUNTY OF LOS ANGELES

NAME OF CONSULTANT

By _____
Deputy Director
Department of Public Works

By _____
President

By _____
Secretary

APPROVED AS TO FORM:

JOHN F. KRATTLI
Acting County Counsel

By _____
Deputy County Counsel

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1/2010

ALTERNATIVE 1

INDEMNIFICATION AND INSURANCE PROVISIONS

I. INDEMNIFICATION

To the fullest extent permitted by law, Consultant shall indemnify, defend, and hold harmless COUNTY, its agents, appointed and elected officers, COUNTY Special DISTRICTS, and employees from and against any and all liability, expense (including defense costs and legal fees), lawsuits, actions, claims, proceedings, and damages of any nature whatsoever, including without limitation, brought for or on account of bodily injury, death, personal injury, or property damage (including property of Consultant), which arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of Consultant, its officers, agents, employees, representatives, contractors, subcontractors, consultants, or subconsultants of any tier.

The foregoing paragraph notwithstanding, Consultant further shall indemnify, defend, and hold harmless COUNTY, its agents, appointed and elected officers, COUNTY Special DISTRICTS, and employees from and against any Workers' Compensation suits, liability, or expense arising from, or connected with, any services performed pursuant to this AGREEMENT on behalf of Consultant by any person.

Neither the Consultant, nor its agents and subconsultants of any tier, shall be obligated to indemnify the COUNTY and its related persons and entities for liabilities caused by the active negligence of the COUNTY and its related persons and entities. However, this provision does not limit any obligation to insure and defend the COUNTY and its related persons and entities arising under the policies of insurance maintained by the Consultant under this provision.

II. INSURANCE

Without limiting Consultant's indemnification of COUNTY and during the term of this AGREEMENT, Consultant shall provide and maintain, at its own expense, the following programs of insurance. Such programs and evidence of insurance shall be satisfactory to the COUNTY and primary to, and not contributing with, any other insurance maintained by the COUNTY. Certificate(s) or other evidence of coverage shall be delivered to the Department of Public Works, Architectural Engineering Division, 900 South Fremont Avenue, 8th Floor, Alhambra, CA 91803, prior to commencing services under this AGREEMENT, shall specifically identify this AGREEMENT, and shall contain the express condition that COUNTY is to be given written notice by registered mail at least thirty (30) days in advance of any modification or termination of insurance.

Failure by Consultant to procure and maintain the required insurance shall constitute a material breach of contract upon which COUNTY may immediately terminate or suspend this AGREEMENT.

A. Liability:

Such insurance shall be endorsed naming the COUNTY of Los Angeles as an additional insured and shall include:

1. General liability insurance written on a commercial general liability form or on a comprehensive general liability form covering the hazards of premises/operations, contractual, independent contractors, advertising, products/completed operations, broad form property damage, and personal injury with a combined single limit of not less than One Million Dollars (\$1,000,000) per occurrence.
 - a. If written with an annual aggregate limit, the policy limit should be three (3) times the above-required occurrence limit.
 - b. If written on a Claims Made Form, the Consultant shall be required to provide an extended two-year reporting period commencing upon termination or cancellation of this AGREEMENT.
2. Comprehensive auto liability for all owned, non-owned, and hired vehicles with a combined single limit of not less than One Million Dollars (\$1,000,000) per occurrence.

B. Workers' Compensation:

Insurance in an amount and form to meet all applicable requirements of the Labor Code of the State of California, including Employer's Liability with a One Million Dollar (\$1,000,000) limit, covering all persons the Consultant is legally required to cover.

C. Professional Liability:

Insurance covering liability arising from any error, omission, or negligent act of the Consultant, its officers, or employees with a limit of liability of not less than One Million Dollars (\$1,000,000) per claim or occurrence, and Two Million Dollars (\$2,000,000) in aggregate. If written on a Claims Made Form, Consultant shall continue to provide coverage for this project for a period of two (2) years from the date of termination or completion of this AGREEMENT.

Consultant agrees to the above Indemnification and Insurance Provisions.

Initials

ALTERNATIVE 2

INDEMNIFICATION AND INSURANCE PROVISIONS

A. **INSURANCE**: Consultant shall, at its own expense, maintain with insurance companies acceptable to the COUNTY general liability, professional liability, comprehensive automobile liability, and workers' compensation insurance as set forth below:

1. **General Liability Insurance**: The Consultant shall maintain general liability insurance written on a commercial or comprehensive general liability form(s) that include(s) coverage for premises-operations, products/completed operations, contractual liability, broad-form property damage, and personal injury liability. The general liability policy shall have a combined single limit of not less than One Million Dollars (\$1,000,000) per occurrence.

2. **Professional Liability Insurance**: Consultant shall maintain professional liability insurance, including contractual liability coverage, with policy limits of at least One Million Dollars (\$1,000,000) per claim or occurrence and Two Million Dollars (\$2,000,000) in the aggregate.

3. **Comprehensive Automobile Insurance**: The Consultant shall maintain automobile insurance for all owned, non-owned, and hired vehicles with a combined single limit of One Million Dollars (\$1,000,000) per occurrence or accident.

4. **Workers' Compensation Insurance**: The Consultant shall maintain workers' compensation insurance in an amount and form which will meet all applicable requirements of the Labor Code of the State of California, including Employers' Liability Coverage with limits of One Million Dollars (\$1,000,000) per occurrence.

5. **General Conditions Relating to Insurance**:

a. **Additional Insureds**: The COUNTY, DISTRICT, its agents, appointed and elected officers, COUNTY Special DISTRICTS, and employees ("COUNTY and its related persons and entities") shall be named as additional insureds on each policy, except workers' compensation and professional liability insurance, the Consultant is required to provide under this AGREEMENT. Such insurance shall be primary to, and not contributing with, any other insurance maintained by or for the COUNTY and its related persons and entities.

b. **Waiver of Subrogation**: Each policy obtained by the Consultant to fulfill its obligations under this provision shall contain a provision waiving the right of the insurer to subrogate against the COUNTY and its related persons and entities for any liability covered by the policy.

c. **Claims Made Policies**: If any of the policies obtained by the Consultant to fulfill its obligations under this provision are written on a claims-made basis, the policy shall be endorsed to provide an extended reporting period of not less than two years following the termination of this AGREEMENT or the Consultant's work on the project referred to in this AGREEMENT, whichever is later.

d. **Occurrence Policies**: If any of the policies obtained by the Consultant to fulfill its obligations under this provision are written on an occurrence basis, the policies and any endorsements required by this provision (including, but not limited to, the additional insured endorsements) shall be maintained in full force and effect for a period of not less than two years following the termination of this AGREEMENT or the Consultant's work on the project referred to in this AGREEMENT, whichever is later.

e. **Certificate of Insurance**: Prior to commencing work on the project referred to in this AGREEMENT, the Consultant shall provide to the COUNTY certificate(s) of insurance identifying the insurers, policies, coverages, and limits of liability for the insurance the Consultant is required to provide under this provision. Accompanying the certificate(s) shall be a copy of the required additional insured endorsement(s) to the policies obtained by the Consultant as set forth above.

f. **Notice of Cancellation or Nonrenewal**: Each policy shall require the insurer to give the COUNTY at least 30 days notice of termination of the policy by cancellation, rescission, nonrenewal, or otherwise. Notice shall also be given to COUNTY of any material change in the terms of the coverage required to be maintained by the Consultant under this provision.

g. **Delivery of Notices**: All certificates and notices required by this provision shall be in writing and shall be delivered to the Department Contract Administrator. The notices and certificates shall refer to this contract.

h. **Maintenance of Insurance**: The Consultant shall promptly pay the premiums on all insurance policies required under this provision. The Consultant further agrees that the policies shall remain in full force and effect as required by this AGREEMENT. Consultant shall immediately obtain replacement coverage for any policy which is terminated, canceled, non-renewed, or which has paid policy limits, or upon the insolvency of the insurer issuing the policy.

i. **Breach**: Failure on the part of Consultant to procure or maintain insurance as required by this provision shall constitute a material breach of this contract. In the event of such a breach, the COUNTY may, among other things, terminate

this AGREEMENT, suspend work being performed on the project by or on behalf of the Consultant, or at its sole discretion, the COUNTY may obtain replacement coverage. In the event that replacement coverage is obtained, the Consultant shall, upon demand, repay the COUNTY for the full amount of premiums paid by the COUNTY for the replacement coverage. In its sole discretion, the COUNTY may offset the cost of premiums against any monies due to the Consultant from the COUNTY.

B. INDEMNIFICATION: To the fullest extent permitted by law, Consultant shall indemnify, defend, and hold harmless the COUNTY, DISTRICT, its agents, appointed and elected officers, COUNTY Special DISTRICTS, and employees ("COUNTY and its related persons and entities") from any and all claims, liabilities, expenses (including defense costs and legal fees), lawsuits, actions, proceedings, and damages of any nature whatsoever, including without limitation, brought for or on account of bodily injury, death, personal injury, or property damage (including property of Consultant), which arise out of, pertain to, or related to the negligence, recklessness or willful misconduct of the Consultant, its officers, agents, employees, representatives, contractors, subcontractors, consultants, or subconsultants of any tier. The obligation to indemnify the COUNTY is in addition to the obligation to procure insurance as set forth in this provision.

COUNTY agrees that prior to demanding a defense from the Consultant, that it or Consultant shall tender such claim to the insurers issuing the policies of insurance referred to in this provision. If the claims are not covered by any policy referred to in this provision, or the insurers fail or refuse to defend or indemnify the COUNTY or any of its related persons and entities, then the Consultant's duty to defend, indemnify and hold harmless the COUNTY under the foregoing indemnity provision shall apply in full.

Neither the Consultant, nor its agents and subconsultants of any tier, shall be obligated to indemnify the COUNTY and its related persons and entities for liabilities caused by the active negligence of the COUNTY and its related persons and entities. However, this provision does not limit any obligation to insure and defend the COUNTY and its related persons and entities arising under the policies of insurance maintained by the Consultant under this provision.

C. SUBCONSULTANTS' INSURANCE AND INDEMNIFICATION: Consultant shall require subcontractors, subconsultants, and independent contractors to maintain the same insurance coverage which it is required to maintain under this provision, including but not limited to, the obligation to name the COUNTY and its related persons and entities as additional insureds under each such policy.

Consultant further shall require its contractors, subcontractors, consultants, and subconsultants, to indemnify and defend the COUNTY and its related persons and entities from any and all claims, liabilities, expenses, lawsuits, actions, or proceedings arising out of, pertaining to, or relating to the negligence, recklessness, or willful misconduct of each contractor, subcontractor, consultant, subconsultant, or any tier.

Failure on the part of Consultant to require its subcontractors, subconsultants, and independent contractors to provide insurance and indemnification shall constitute a material breach of this contract. In the event of such breach, the COUNTY may, among other things, terminate this AGREEMENT, suspend work being performed on the project by or on behalf of the Consultant, or in its sole discretion, the COUNTY may obtain replacement insurance coverage. In the event that replacement coverage is obtained, the Consultant shall, upon demand, repay the COUNTY for the full amount of premiums paid by the COUNTY for the replacement coverage. In its sole discretion, the COUNTY may offset the cost of premiums against any monies due to the Consultant from the COUNTY.

Consultant agrees to the above Indemnification and Insurance Provisions.

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1/2007

SCOPE OF WORK

SPREADING GROUNDS TELEMETRY SYSTEM UPGRADE

SECTION 1 – GENERAL INFORMATION AND REQUIREMENTS

A. WORK ORGANIZATION

A - 1 GENERAL

The organization and payment of the work shall be divided into each individual deliverable as listed in Section T, Schedule of Tasks and Deliverables. Each task requires a completely upgraded spreading ground telemetry system that is properly functioning according to the contract objectives within all the cities. Generally, each task shall be performed similarly with some variations as described in this Scope of Work and any other reference cited herein. The Consultant is responsible for organizing the work according to the specified task.

A - 2 REQUIRED AND AS NEEDED WORK

The existing Spreading Grounds Telemetry System (SGTS) include gate controls, basin and flow monitoring sensors, and video surveillance. The current SGTS is installed at the Rio Hondo Spreading Grounds (SG), San Gabriel SG, Bartolo pump station, rising water station, San Gabriel River Stations F263 and F262, Zone 1 ditch, Citrus SG, Forbes SG, and Alhambra headquarters. See Exhibit B for the project location map.

The required work for the SGTS upgrades includes replacing the ARAMIS software with a modern industry standard Graphical User Interface (GUI) and database. Additionally, the project will replace the Geomation Measurement and Control Units (MCUs) with Siemens programmable logic controllers (PLCs) and appurtenances, which are an industry standard.

In addition, the Consultant may be called upon to perform as-needed trouble shooting services and/or repairs to the facilities such as wiring, conduit replacement, water level sensors, gate position sensors, battery power sensors, and any other existing appurtenances that are used with the upgraded telemetry system. As needed work shall be undertaken only with written approval from the Contract Manager.

B. WORK LOCATION

The work shall be performed in the following cities:

City of Azusa, Thomas Brother Map Page 599-B2: Exhibit B, Project Location Map.

City of Bell Gardens, Thomas Brother Map Page 706-B1: Exhibit B, Project Location Map.

City of Glendora, Thomas Brother Map Page 569-J7: Exhibit B, Project Location Map.

City of Pico Rivera, Thomas Brother Map pages 676-E4 and 676-H5: Exhibit B, Project Location Map.

C. SCOPE AND CONTROL OF WORK

C - 1 WORK DESCRIPTION

C - 1.1 General

Without limiting the other specifications and requirements set forth in this Scope of Work, the Contractor shall meet the following requirements.

Specialize in the installation of electronic equipment and shall specialize in the programming and installation of the specific hardware used.

Work with the existing Public Works contractor, up to 200 hours of coordination, to develop an integrated Wonderware program that serves as an interface for the SGTS and Rubber Dam telemetry systems. Each system will have an independent KepServer application to feed the Wonderware interface.

Upgrade, install, connect, configure, and develop telemetry systems at the spreading grounds located in Exhibit B, Location Map. The completed telemetry upgrade shall provide both local and remote monitoring capabilities for specific conditions at all the facilities in Table C-1.2. All accessories required for satisfactory upgrade, installation and operation of the equipment, in order to meet the objective of the telemetry system as described herein, shall be furnished and installed whether or not explicitly mentioned in this Scope of Work.

The Consultant is responsible for the manufacturing, delivery, and installation of all necessary hardware, software, programming, and other upgrade project components. All components shall have standard modular, and scalable properties, shall utilize commercial off-the-shelf products, such that the telemetry system is consistent with industry standards, can have a flexible arrangement, and can be easily expanded upon if necessary in the future.

The upgraded telemetry system shall be installed to operate in harsh outdoor environments without auxiliary heating and cooling systems. The telemetry system shall be designed to operate and monitor 24 hours per day, unattended, with operator attention required only periodically. Operator intervention requirements shall include gate operations, analyzing collected data as desired, modifying system timing, and responding to alarms. Operator adjustments to timing and sensor settings should be minimal.

The upgraded telemetry system shall accommodate potential modifications or future expansions if deemed necessary. Such modification shall not require additional software or central hardware.

The completed telemetry system upgrade shall provide real-time data monitoring (with synchronized reporting by all equipment), present the data in a user-friendly interface and allow for quick data manipulation and analysis. All software configurations and hardware, and all installation thereof, shall be similar and compatible to that installed on the Valley Rubber Dams and San Gabriel Rubber Dams telemetry systems. Refer to Exhibit E for a list of software used at Valley Rubber Dams and San Gabriel Rubber Dams telemetry systems.

All work shall be performed in accordance with this Scope of Work and any other supporting documents later incorporated into the project Scope of Work.

C - 1.2 Upgrade Performance Criteria

The upgraded system shall be fully capable of monitoring the conditions of the spreading ground channel facilities identified on Table C – 1.2 and in subsection C - 2, “As-Built” Plans and Specifications. Table C – 1.2 describes the

spreading ground facility components that will be monitored by the system. The following is a list of data that is monitored by the system.

1. On/Off and Remote Gate Position
2. Gate Positions
3. Basin/Forebay/Channel Water Level

The system shall be fully compatible with Wonderware Development Studio Unlimited, Unlim/60K/500 TSE. V10.1A (or most current version) and KEPServerEX V5.5.98.0 (or most current version) w/Siemens S7-2--/S7-300/S7-400/S7-1200 Ethernet OPC Server.

The system shall operate both automatically on a scheduled frequency and on-command as required to fulfill the needs of Public Works.

1. Data Storage: The monitored data shall be automatically stored locally and transmitted to Public Works Headquarters central computer every 15 minutes. Historic data should be archived on Hydstra database through Kepserver software.

2. Transmission: The transmission path method shall be as shown on Exhibit F.

3. Alarms: The system shall be capable of triggering alarms based on user configurable threshold limits of any instrument reading or calculated value. The system shall accommodate system additions to send email notifications to specified recipients and to call the County of Los Angeles Department of Public Works (Public Works) Dispatch and Public Works' Flood Maintenance Division (FMD) in the occurrence of an alarm. Also, the Alarm system shall incorporate the existing Rio Hondo Spreading Grounds Radial Gate Dispatch Alarm System and the Citrus Spreading Ground Water Level Warning Dispatch Alarm System. Please reference Subsection L - 2.5.

TABLE C – 1.2 FACILITY INFORMATION				
MCU & RIO PANEL	FACILITY	CITY	MCU TYPE PLAN SHT No.	INPUT TYPE
RHG1	RIO HONDO	PICO RIVERA	GATEWAY MCU GATE CONTROLS FLOW & BASIN MEASUREMENT EXHIBIT C-26	9 CHANNELS: 5-ANALOG 4-20 MA 4 DIGITAL STATUS
RHG2	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS EXHIBIT C-27	28 CHANNELS: 10-ANALOG 4-20 MA 9-DIGITAL STATUS 9-0 TO 10 VOLTS
RH02	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-29	10 CHANNELS: 2-ANALOG 4-20 MA 5-DIGITAL STATUS 3-DIGITAL TRIGGER
RH04	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-30	7 CHANNELS: 1-ANALOG 4-20 MA 3-DIGITAL STATUS 3-DIGITAL TRIGGER
RH05	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-31	10 CHANNELS: 2-ANALOG 4-20 MA 5-DIGITAL STATUS 3-DIGITAL TRIGGER
RH07	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-32	24 CHANNELS: 2-ANALOG 4-20 MA 13-DIGITAL STATUS 9-DIGITAL TRIGGER
RH08	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-33	24 CHANNELS: 2-ANALOG 4-20 MA 13-DIGITAL STATUS 9-DIGITAL TRIGGER
RH09	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-34	18 CHANNELS: 2-ANALOG 4-20 MA 10-DIGITAL STATUS 6-DIGITAL TRIGGER
RH10	RIO HONDO	PICO RIVERA	GATEWAY MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-35	19 CHANNELS: 6-ANALOG 4-20 MA 11-DIGITAL STATUS 2-DIGITAL TRIGGER
RH12/DD23	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-37	15 CHANNELS: 3-ANALOG 4-20 MA 6-DIGITAL STATUS 6-DIGITAL TRIGGER
RH14	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS	10 CHANNELS: 2-ANALOG 4-20 MA

TABLE C – 1.2 FACILITY INFORMATION				
MCU & RIO PANEL	FACILITY	CITY	MCU TYPE PLAN SHT No.	INPUT TYPE
			BASIN MEASUREMENT EXHIBIT C-38	5-DIGITAL STATUS 3-DIGITAL TRIGGER
RH17	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-36	10 CHANNELS: 2-ANALOG 4-20 MA 5-DIGITAL STATUS 3-DIGITAL TRIGGER
RHDB	RIO HONDO	PICO RIVERA	FIELD MCU GATE CONTROLS FOREBAY/FLOW MEASUREMENT EXHIBIT C-28	26 CHANNELS: 6-ANALOG 4-20 MA 5-DIGITAL STATUS 15-DIGITAL TRIGGER
RHRW	WHITTIER NARROWS	PICO RIVERA	FIELD MCU GATE CONTROLS FOREBAY/FLOW MEASUREMENT EXHIBIT C-39	6 CHANNELS: 2-ANALOG 4-20 MA 1-DIGITAL STATUS 3-DIGITAL TRIGGER
ZON1	ZONE 1 DITCH HEADWORKS	PICO RIVERA	GATEWAY MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-40	9 CHANNELS: 5-ANALOG 4-20 MA 2-DIGITAL STATUS 2- 0 TO 10 VOLTS
SCO1	SAN GABRIEL COASTAL	PICO RIVERA	GATEWAY MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-41	29 CHANNELS: 9-ANALOG 4-20 MA 8-DIGITAL STATUS 9-DIGITAL TRIGGER 3- 0 TO 10 VOLTS
SCO2	SAN GABRIEL COASTAL	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-42	11 CHANNELS: 3-ANALOG 4-20 MA 2-DIGITAL STATUS 6-DIGITAL TRIGGER
SCO3	SAN GABRIEL COASTAL	PICO RIVERA	FIELD MCU CHANNEL MEASUREMENT EXHIBIT C-57	2 CHANNELS: 2-ANALOG 4-20 MA SOLAR PANEL
SCO4	SAN GABRIEL COASTAL	PICO RIVERA	FIELD MCU GATE CONTROLS NO EXHIBIT AVAILABLE	
F263	SAN GABRIEL RIVER	PICO RIVERA	FIELD MCU BASIN MEASUREMENT EXHIBIT C-58	1 CHANNELS: 1-ANALOG 4-20 MA
F262	SAN GABRIEL RIVER	Downey	FIELD MCU BASIN MEASUREMENT EXHIBIT C-59	1 CHANNELS: 1-ANALOG 4-20 MA
CIT1	CITRUS SPREADING GROUNDS	Covina	GATEWAY MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-49	8 CHANNELS: 8-ANALOG 4-20 MA

TABLE C – 1.2 FACILITY INFORMATION				
MCU & RIO PANEL	FACILITY	CITY	MCU TYPE PLAN SHT No.	INPUT TYPE
FORB	SAN GABRIEL RIVER	PICO RIVERA	FIELD MCU GATE CONTROLS BASIN MEASUREMENT EXHIBIT C-52	4 CHANNELS: 4-ANALOG 4-20 MA

4. Display: The upgraded system shall display both the current and historical trending in a new graphical user interface on a server at the Public Works Headquarters Building, Rio Hondo Spreading Grounds, and San Gabriel Coastal Spreading Grounds.

C - 2 "AS BUILT" PLANS AND SPECIFICATIONS

C - 2.1 General

The Consultant shall keep at the jobsite a copy of this Scope of Work and Exhibit C, System "As Built" Plans, at all times.

This Scope of Work and Exhibit C, "As Built" Plans are intended to be complementary and cooperative. Anything specified in this Scope of Work and not shown on Exhibit C, "As Built" Plans, or vice versa, shall be as though shown on or specified in both.

Exhibit C, "As Built" Plans, shall be supplemented by such working drawings and shop drawings as are necessary to adequately control the upgrade work.

The Consultant shall ascertain the existence of any conditions affecting the cost of the work through a reasonable prior examination of the jobsite. Exhibit D provides the Consultant with information regarding existing, non-responsive equipment.

The Consultant shall, upon discovering any error or omission in this Scope of Work or Exhibit C, "As Built" Plans immediately call it to the attention of the Contract Manager.

C - 2.2 "As Built" Plans

Exhibit C, "As Built" plans show the wiring diagrams to the twenty three installed MCUs to be upgraded to the Siemens

PLC. To the best of Public Works' knowledge the "As Built" plans are accurate. It will be the responsibility of the Consultant to check for inconsistencies.

C - 2.3 Specifications

The SGTS upgrade work shall be performed or executed in accordance with this Scope of Work.

C - 3 INSPECTION

The work is subject to inspection and approval by the Contract Manager. The Consultant shall notify the Contract Manager two working days before inspection by the Contract Manager is required. Unless otherwise authorized, the work shall be done in the presence of the Contract Manager or the Public Works representative authorized by the Contract Manager. Any work done without proper inspection will be subject to rejection. The Contract Manager and/or any representatives authorized by the Contract Manager shall have access to the work at all times. The Consultant shall provide every reasonable facility for ascertaining that the materials and workmanship are in accordance with these specifications. Inspection of the work shall not relieve the Consultant of the obligation to fulfill all conditions of the Contract.

D. CHANGES IN WORK

The Consultant shall execute work to completion regardless of changes in required materials, equipment, personnel, other pertinent resources, and in field and working conditions throughout the duration of this Contract. The Consultant shall implement sound programming and engineering judgment in meeting the project objectives. Public Works anticipates the judicious execution of the work to meet those objectives.

The Consultant shall prudently communicate to the Contract Manager any foreseeable changes in work to meet the objective of this Scope of Work. The Consultant shall be responsible for communicating in writing the cost of such changes.

Where unforeseeable changes occur during the execution of work the Consultant shall, before proceeding with work, provide all relevant evidence that such changes are required to meet the objective of this Scope of Work for approval by the Contract Manager. In addition, the consultant shall provide a written plan of action to perform the necessary work and provide a cost estimate to perform the work. If and only when the Contract Manager approves the unforeseeable change in work and associated costs to perform the work, Public Works shall provide a written

authorization to proceed with the additional work and shall reimburse the Consultant in such amounts as negotiated, for the work that has been changed. The Consultant shall provide the Contract Manager with receipts, bills, invoices, and the like for proper justification of said reimbursement.

E. PRODUCT DELIVERY, STORAGE, AND HANDLING

E - 1 PROTECTION

Consultant shall protect all the equipment, during transportation and installation; provide proper coverage to prevent damage due to weather conditions; store at a secure site to avoid theft or vandalism; and replace damaged materials. Stored materials shall be reasonably accessible for inspection.

The Consultant may store equipment, materials, and pertinent components at the following locations:

- 1) Rio Hondo Spreading Grounds
353 S. Van Norman Rd.
Montebello, CA. 90640
- 2) San Gabriel Coastal Spreading Grounds
8678 E. Whittier Blvd.
Pico Rivera, CA 90660

The Consultant shall coordinate any and all use of these facilities with the Contract Manager and appropriate field superintendents.

If additional storage is required for the project, the Consultant shall ensure that such facilities are secured prior to commencement of work.

E - 2 INSPECTION

All materials intended for use on this project are subject to inspection. Consultant shall make all materials available for inspection by authorized Public Works representatives.

F. EXECUTION OF WORK

The Consultant shall diligently execute the work to completion. If the Contract Manager determines that the Consultant is failing to execute the work to the proper extent, the Consultant shall, upon orders from the Contract Manager, immediately take steps to remedy the situation.

F - 1 WORKING DAY

A working day is any day within the period when the Notice to Proceed is issued and the date provided for completion. Days that are not considered working days are as follows:

1. Saturday
2. Sunday
3. Any day designated as a holiday by Public Works.
4. Any day designated as a holiday in a Master Labor Agreement entered into by the Consultant.

G. RESPONSIBILITIES OF THE CONSULTANT

Consultant shall provide new components that shall be in working order at time of installation and testing.

Consultant shall perform testing to ensure that the upgraded system functions and the Automated Data Acquisition occur as per this Scope of Work.

Consultant shall provide software and hardware that will be compatible with Section II.

Consultant shall install and configure all deployed hardware and software in a manner consistent with good security practices to avoid unauthorized access to any installed component or system. This includes but may not be limited to ethernet wireless radios, ethernet switches, PLC devices, alarm management software, DDS modems etc.

Consultant shall provide the planned security configurations for each installed component or system (if applicable) for review and approval by LACDPW Contract Manager and Information Security Officer. In addition, the Consultant shall change any default system password for each software and hardware component where applicable.

G - 1 REQUIREMENTS AND REGULATORY AGENCIES

SAFETY REQUIREMENTS

The Consultant shall provide and require the use of personal protective and lifesaving equipment for all persons working at the SGTS sites in accordance with the requirements of the OSHA and California OSHA regulations.

For safety purposes, 24-hour notification shall be given to Contract Manager prior to entering any SGTS facility. Flammable articles and liquids shall be kept out of the control room. Manhole covers and floor hatches shall be kept covered at all times unless maintenance is being performed. Confined space entry practices shall be followed where appropriate. Proper safety practices shall be followed around high voltage equipment. Walking on an inflated rubber dam will not be permitted.

Where ponded water is present, proper precautions shall be taken to assure that no person, equipment, or job site are present or downstream of the facility. Responsible maintenance methodology shall be used to prevent any unexpected safety hazards caused by quick deflation of the rubber dam and release of held water.

The Consultant should direct his attention to existing bicycle, hiking and equestrian trails located along the channel service roads and other portions of the channel where the SGTS are located. When maintenance work is being performed, proper precautions shall be taken to assure the safety of the recreational public:

1. The Consultant shall only access facilities from gated entry points. Gates shall be locked whenever maintenance work is not being performed.
2. Vehicles used for maintenance and upgrade purposes shall be equipped with flashing lights for public alerting purposes. Proper safe driving techniques shall be followed.
3. During major repairs, warning and precaution signs shall be posted. Any trails shall be kept open at all times.

G - 2 PROTECTION AND RESTORATION OF EXISTING IMPROVEMENTS

The Consultant shall be responsible for the protection of public and private property adjacent to the work and shall exercise due caution to avoid damage to such property.

The Consultant shall repair or replace all existing improvements within the right of way which are not designated for removal which are damaged or removed as a result of its operations. Repairs and replacements shall be at least equal to existing improvements and shall match them in finish and dimension.

SECTION II - PROJECT TASKS AND DELIVERABLES

H. TASK 1: PROJECT MANAGEMENT

H - 1 WORK SCHEDULE

The work schedule shall reflect the following:

H - 1.1 Criteria

Within 15 working days after the County issues the Notice to Proceed, the Consultant shall prepare and deliver a work schedule that conforms to the following criteria:

1. The work schedule shall be prepared using an automated Network Analysis System (NAS) with Critical Path Method (CPM) techniques. The NAS shall be the latest version of Primavera "Suretrak", Microsoft "Project", or Public Works approved equal.
2. Task items shall be based on the items of work for each task per Section A, Work Organization.
 - a. Work activities shall be subdivided into those portions to be upgraded during each task.
 - b. The procurement of materials and equipment shall be included as activities.
 - c. Work to be performed by subcontractors shall be identified and shown as work activities.
3. Completion of the work shall be performed in accordance with this Scope of Work.
4. Milestones shall be clearly illustrated and identified as such.

H - 1.2 Requirements

The work schedule shall reflect the following:

1. Consultant shall work within the time restrictions as specified by each city to comply with the local noise ordinance.
2. Consultant shall schedule and be responsible for coordinating related work with other trades, vendors,

subcontractors, and others to avoid omissions and delays in project status.

3. Work shall be scheduled to be performed by task as described in Section A, Work Organization. The required work shall be scheduled and performed first.

H - 1.3 Monthly Updates

The Consultant shall submit two paper copies of the updated work schedule to the Contract Manager on the first working day of each month.

All work shall be performed in accordance with the approved schedule. Any variations to project scheduling must be approved by the Contract Manager.

H - 2 MANAGEMENT MEETINGS

Consultant shall attend and participate in all meetings scheduled by or at the request of the Contract Manager. These include, but are not limited to, a regularly scheduled monthly management meeting on the project site for the purposes of the management of the installation and for the management of the project site operations. The Consultant shall make available those resources, reports, and records necessary to effectuate timely and productive management meetings. The Consultant shall formally record and publish the minutes, which shall be furnished to all attendees and other interested parties no later than one week following the conclusion of the meeting.

Deliverables: Work Schedule, monthly updates to Work Schedule, management meeting minutes.

I - 0 TASK 2A: DISCOVERY AND DESIGN EFFORT

Consultant shall review previous project as-builts, perform field investigations, meet with Public Works to discuss findings and submit a Final Design Report incorporating comments and feedback to the Contract Manager.

I – 0.1 Planned Security Configurations

Consultant shall provide the planned security configurations for each installed component or system (if applicable) for review and approval by LACDPW Contract Manager and Information Security Officer.

Deliverables: Submittal of Final Design Report and planned security configurations.

I - 1 TASK 2B: SUBMITTALS

Submittals as described below shall be mailed to the Contract Manager within 20 business days of the issuance of the NTP. All submittals shall be approved by the LACDPW Contract Manager prior to commencement of any work.

I – 1.1 Working Drawings

Working drawings shall show details of work to be designed and performed by Consultant that are not specifically shown on Exhibit C, "As Built" Plans or conditions encountered in the field.

I – 1.2 Shop Drawings

Shop drawings shall show details of manufactured or assembled products proposed to be incorporated into the work. Shop drawings include:

1. Needed upgraded conduit, conductor, and wire, subsection J-1.2, Submittals.
2. Needed upgraded Sensors and Communication Cable, subsection K-1.2, Submittals.
3. SGTS Equipment, subsection L-1.1, Submittals.

I – 1.3 Supporting Information

The following is a list of supporting information required for the administration of this contract:

Data supporting Table C1.2, Sections K, L and M, Exhibit E, including updates, if applicable. This includes, but is not limited to, catalog sheets, manufacturer's brochures, technical bulletins, specifications, equipment cut sheets, diagrams, product samples, and any other information necessary to describe a system, product, or item.

I – 1.4 Acceptance Test Plan

Prior to Final Testing, the Consultant must submit an Acceptance Test Plan that is mutually approved by County and vendor prior to commencing testing to verify that the Automated Data Acquisition and Telemetry System (ADATS) meet the requirements and specifications. See Section R for Final Testing requirements.

Deliverables: Working drawings, shop drawings, supporting information for items on Table C1.2, Sections K, L, M and Exhibit E, acceptance test plan.

J. TASK 3: POTENTIAL CONDUIT, CONDUCTOR, AND WIRE INSTALLATION

J - 1 GENERAL

Consultant may need to install electrical conduit and related products in accordance with this Scope of Work. Detailed product specifications are included in subsection J-2 for all products listed in subsection J-1.1 below.

The approximate number of devices and related appurtenances to be upgraded in each work location is to be field determined by the Consultant, based on the inventory of existing non-responsive equipment listed in Exhibit D.

J - 1.1 Project Conditions

- Consultant shall verify routing and termination locations of equipment and conduits prior to rough-in.
- Conduit runs on Exhibit C, "As Built" Plans, is approximate unless dimensioned. Consultant shall route conduit as required to complete wiring system.

J - 1.2 Submittals

- Product Data: Consultant shall provide data for the items needed.

J - 2 PRODUCTS

J - 2.1 Potential Conduit Requirements

- Outdoor Locations, Above Grade: Consultant shall use rigid galvanized steel conduit and fittings approved for use with rigid conduit.
- Wet or Damp Locations: Consultant shall use PVC coated rigid galvanized steel conduit, couplings, straps, fittings, and conduit bodies.
- Dry Locations: Consultant shall use rigid galvanized steel conduit.
- Indoor Locations: Consultant shall use rigid galvanized steel conduit in all mechanical or equipment buildings. Consultant shall use electrical metallic tubing (EMT) for installations in offices, control rooms, or other indoor locations as approved by the Contract Manager.

J - 2.2 Metal Conduit

- Rigid Galvanized Steel Conduit: ANSI C80.1.

J - 2.3 Liquid Tight Flexible Metal Conduit

- Description: Interlocked steel construction with PVC jacket. FS A-A-55810.

J - 2.4 Fittings and Conduit Bodies

- Description: Hot dipped galvanized steel or malleable iron (Form 35). ANSI/NEMA FB1.

J - 2.5 Plastic Conduit and Fittings

- Conduit Schedule 40 PVC, NEMA TC2.
- Fittings and Conduit Bodies: NEMA TC3.

J - 2.6 Signal and Control Wires

- Conductors shall be flexible stranded copper machine tool wire; UL listed Type MTW/TEW and shall be rated 600 volts. Wires for instrument signal circuits and alarm

input circuits shall be #14 AWG. All other wires, including shielded cables, shall be #18 AWG minimum.

- All wiring rated above 50V shall be run in separate conduit from wiring rated below 50V.

J - 2.7 Pull Boxes

- Below grade pull boxes shall be Polymer Concrete, Parkway rated box and shall be 30"x17"x12"D minimum. Pull boxes shall match the existing pull boxes installed for the Telemetry System.
- Cover to be marked "LACFCD" and color to blend in with surroundings.
- Pull box and cover assembly shall meet H20 traffic loading.

J - 2.8 Installations

- Consultant shall install conduit in accordance with NECA "Standard of Installations".
- Consultant shall install non-metallic conduit in accordance with manufacturer's instructions.
- Consultant shall arrange supports to prevent misalignments during wiring installations.
- Consultant shall support all conduit using hot dipped galvanized steel or malleable iron straps.
- Consultant shall group related conduits and support using conduit rack. Consultant shall construct rack using galvanized Unistrut channel.
- Consultant shall arrange conduit to present neat appearance. Contractor shall install conduits level and plumb.
- Consultant shall route conduit parallel and perpendicular to walls.
- Consultant shall cut conduit square using a saw and de-burr cut ends.

- Consultant shall fasten conduit securely to fittings.
- Consultant shall join non-metallic conduit using cement as recommended by manufacturer. Contractor shall wipe conduit dry and clean. Contractor shall apply PVC primer and cement evenly to entire area inserted in fitting. Contractor shall allow it to cure for 20 minutes.
- Consultant shall use weather tight conduit hubs to fasten conduit to metallic enclosures.
- Consultant shall provide suitable pull string in each conduit. Contractor shall use suitable caps to protect installed conduit against entrance of dirt and water.
- Consultant shall ground and bond conduit in accordance with NFPA 70.
- Consultant shall bury all underground conduit runs at a minimum of 18 inches below finished grade.
- Consultant shall keep all instrumentation conduit runs a minimum of 18 inches from electrical conduit runs.
- Consultant shall use Dig Alert to locate and protect all existing electrical conduits and water pipes at the work site.

Deliverables: Provide inventory with devices and related appurtenances to be upgraded, repaired or replaced, installation of needed power conductors, signal and control wires, installation of rigid galvanized steel conduits, liquid tight flexible metal conduits, fittings and conduit bodies, installation of plastic conduits and fittings, installation of signal and control wires, installation of pull boxes, installation of galvanized racks to support conduits.

K. TASK 4: SENSOR AND COMMUNICATION CABLE INSTALLATION, CALIBRATION AND TESTING

K - 1 GENERAL

Consultant shall install any needed sensors in accordance with this Scope of Work. Detailed product specifications are included in subsection K-2 for all sensors listed in subsection K-1.1 below. Consultant shall use all instrument enclosures that are NEMA Type 6 or Public Works approved equal.

Consultant shall run all necessary communications cables from installed sensors to the appropriate RIO/PLC location. Detailed product specifications are included in subsection K-2 for the communication cables listed in subsection K-1.1 below. The approximate lengths of cable to be installed in each city are to be field determined by the Consultant. Exhibit D provides the consultant with information regarding existing, non-responsive equipment.

K - 1.1 Subsection Includes

- Water Level Sensor.
- Gate Position Sensor
- Battery Power Sensor

K - 1.2 Submittals

- O & M Manuals
- Specs for the communication cables
- Calibration Reports
- Manufacturer's Installation Instructions

K - 1.3 Qualifications

- Manufacturer: Consultant shall utilize a company specializing in manufacturing products specified in this section with a minimum of 3 years experience.

K - 1.4 Regulatory Requirements

- Consultant shall conform to requirements of ANSI/NFPA 70 (National Electric Code).
- Consultant shall furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

K - 2 PRODUCTS

Water Level Sensor

General:

- Function: Measure and transmit a signal proportional to water level.
- Type: Submersible, Two-wire transmitter.
- Parts: Transmitter, sensor termination enclosure and cable.

Performance:

- Range: As needed to replace existing sensor.
- Accuracy: 0.1% of full scale.
- Sensitivity: +/- 0.5% of reading.
- Operating Temperature: Minus 5 to plus 140 degrees F.

Service:

- Process Liquid: Water.
- Mounting: NPT, transmitter must fit in a 3/4-inch access pipe.
- Service: Outdoor heavy duty.
- Ingress Protection: NEMA 6 to 2,300 feet of water.

Features:

- Materials: Titanium Body and components with the ability to withstand elevated chloride levels.
- Cable length of the transmitter shall have 30 feet long extra in addition to the mounting depth as indicated in the instrumentation schedule in plans.

Signal Interface:

- Output: 4 to 20 mA for 24V D.C. supply.

Manufacturers:

- Druck or Public Works approved equal.

K - 3 PRODUCT CALIBRATION AND TESTING

Product calibration and testing shall be performed as follows:

1. Consultant shall verify the continuity of the wiring.
2. Consultant shall perform calibration and testing for proper operation over the full range of the instrument.
3. Consultant shall perform testing of each data measurement device at each site by comparing with manually obtained data. The method for acquiring manually obtained data shall be approved by the Public Works' Contract Manager prior to any calibration activities.

All results shall be recorded and submitted to the Contract Manager for verification and approval.

Deliverables: Installation of all needed sensors and communication cables, calibration and testing of all sensors.

L. TASK 5: AUTOMATED DATA ACQUISITION AND CONTROL SYSTEM INSTALLATION, PROGRAMMING AND TESTING

L - 1 GENERAL

Consultant shall install all ADATS products in accordance with this Scope of Work. Detailed product specifications are included in subsection L-2 for all products listed in subsection L-1.1 below.

The approximate number of devices and related appurtenances to be installed in each work location is included in Table C-1.2.

L - 1.1 Subsection Includes

- Programmable Logic Controller (PLC)
- Inter PLC Communications System
- Remote I/O (RIO) System
- Digital Data Service (DDS) Modem
- Radio Frequency Radio Modem
- Workstation

- Server (Alarm System, Graphic Tags, and Client Licenses)

L - 1.2 Submittals

- Consultant shall submit all wiring diagrams, schematics, panel layouts and Operations and Maintenance (O&M) Manuals including spare parts list.
- Consultant shall submit equipment factory test results where available.
- Consultant shall submit manufacturer's installation instructions.
- Consultant shall submit technical Consultants resumes, references, and relevant project experience.

L - 1.3 Qualifications

- Manufacturer: Consultant shall utilize a company specializing in manufacturing products specified in this section.

L - 1.4 Regulatory Requirements

- Consultant shall conform to requirements of ANSI/NFPA 70 (National Electric Code).
- Consultant shall furnish products listed and classified by Underwriters Laboratories, Inc. as suitable for purpose specified and shown.

L - 2 PRODUCTS

L - 2.1 Programmable Logic Controller (PLC) and Remote I/O (RIO)

- The upgraded system shall consist of PLCs and remote I/O modules deployed in a distributed network.
- The PLC shall be Siemens S7-1200 or Public Works approved equal.
- PLC shall have flexible, modular I/O interfaces suitable for a variety of sensors, transducers, and actuators. Specifically,

I/O modules shall provide direct excitation and measurement of 4-20 mA transmitters. Instrumentation interface modules, in conjunction with user programming through the Wonderware software Version 6.0, shall allow instrument connections at PLC.

- The PLC shall be capable of autonomous operation, which is node-driven, distributed intelligence architecture. Once programmed, PLC shall execute tasks autonomously, without polling by a "host" computer. PLC configuration programming shall be non-volatile through power shut downs of any kind, including battery disconnects and replacements.
- The communications protocol supported by the PLC shall allow, in addition to communication directly with workstations, peer to peer communications between any nodes in the network. The reliability and flexibility of peer to peer communication shall have the following features: Error Detection Algorithm, Link Level Security, Network Level Security, Repeating, Routing, and Bridging, Retry and Back-off Algorithm, Link Failure Algorithm, and Physical Link Support.
- The PLC shall support point to multipoint communications using wire line, radio, microwave, and fiber optics. The PLC shall also support point to point using RS232, auto-dial/auto answer for public telephone and satellite phone networks.

L - 2.2 Licensed Radio Frequency IP Router and Etherport Switch

General:

- Function: Data transmission over air.

Performance:

- Data Rates: up to 128 kbps over air.

Features:

- The Radio Frequency Radio Modem shall have an omni-directional antenna or Yagi antenna as indicated on plans for optimal performance and shall operate between 412.662 MHz and 412.775 MHz.

- Radio network shall be designed to incorporate GPS timing at all repeater sites and other sites as necessary to allow transmission to be controlled to occur only within fixed time periods in order to avoid conflict with the existing Rubber Dam Telemetry network which operates on a similar frequency.
- Industry standard 5-port unmanaged switch shall provide connection for needed troubleshooting with a portable PC.

Power Supply: 24V VDC.

Manufacturers:

- CalAmp IP router, model Viper SC radio, or Public Works approved equal.
- Siemens ether port switch CSM 1277 or Public Works approved equal.

Cable Connection:

- Low-loss RG8-type 50-ohm coaxial cable shall be a LMR400 assembly with N-male connectors on both ends, type TIMA40A-XX, where "XX" is the required length, as sold by Talley Communications.

L - 2.3 Workstation and License

- The consultant will be required to provide Wonderware Development Studio Unlimited, Unlim/60K/500 TSE, V10.1.A (or most current version) Functional Upgrade of Factory Suite Basic Competitive Replacement V7.1, SN: 533884-1. Public Works shall be named the owner of the client licenses.
- The Consultant will also be required to procure, install and configure one (1) new workstation at San Gabriel Spreading Grounds. The workstation requirements are the following:
- HP DC8000 CMT, Intel Core 2 Quad Q9650, 3.00GHz, 1,333GHz FSB, 12MB Cache, 4GB DDR3 RAM, 500GB SATA NCQ HDD Smart IV, 16x DVD+/-RW SATA SuperMulti LightScribe, Roxio Creator,

InterVideo WinDVD, 512MB ATI Radeon HD 4550, 10/100/1,000 Ethernet, USB Optical Mouse, USB Keyboard, High Definition Audio, Windows XP Pro, 4 Year NBD Onsite Warranty with retain existing HD.

- Samsung TOC P2770H, 27" LCD monitor, Analog/Digital, 16:09, 1920x1080, 170H/160V degrees viewable, 18Up/2Down degrees tilt, security slot, VESA wall mount compliant, 3Yr. Advanced Business Exchange.
- The Contractor shall coordinate the installation of the workstation with the Public Works, Information Technology Division (ITD). Public Works ITD will work with the consultant to install McAfee anti-virus software on the workstation PC.
- Public Works shall be named the owner of the client licenses.

L - 2.4 Alarms

- The consultant shall work with the existing Public Works Contractor to setup and configure the alarm feature within the existing Wonderware Telemetry Interface on the existing SCADA server at Public Works Headquarters.
- SCADA alarm management software shall provide e-mail notification, voice notification, and log when alarms are activated.
- The consultant shall coordinate with Public Works for the number of alarms and e-mail/voice notification recipients.

L - 2.5 Installation

- The consultant shall mount all hardware related to the system. The consultant shall bring all wire terminations into existing enclosures.
- The consultant shall ensure that all RIO's are installed and programmed appropriately and shall make all wire connections to the RIO and program the units to operate as outlined in this Scope of Work.

- The RIO shall be programmed to integrate transparently with the existing Wonderware Telemetry Interface system at LACDPW Headquarters.
- Commissioning of the system upgrade shall be performed by the Consultant. All pulled cables are subject to inspection and verification to ensure that no damage is sustained during installation.

L - 3 PROGRAMMING AND TESTING GUIDELINES

- a. The Consultant shall ensure that all PLCs are installed appropriately before beginning programming. The installation of SGTS shall not be considered complete until the Consultant has completed all necessary programming, calibrating, and testing
- b. Programming of all units shall occur so that the SGTS operates as outlined in this Scope of Work.
- c. Upon completion of the SGTS upgrade, the Consultant shall provide programming at the PLC.
- d. The Consultant shall work with Public Work's Information Technology Division to install the Wonderware Development Studio Unlimited software on the Public Works virtual server to program and configure new user-friendly graphic user interface modeled after the existing Valley Rubber Dams telemetry system and San Gabriel Rubber Dams telemetry system.
- e. Following programming, the Consultant must demonstrate and document, to the satisfaction of the Public Works' Contract Manager, the functional capabilities of the complete SGTS as stated in this Scope of Work.

L - 4 DEVELOPING GRAPHIC USER INTERFACE (GUI)

- a. The Consultant shall develop a GUI module using the Wonderware Development Studio Unlimited software.
- b. The consultant shall work with Public Work's manager and the Rubber Dam Telemetry consultant to integrate the SGTS with the Rubber Dam telemetry system.
- c. The SGTS GUI shall display basin water level, gate settings and controls, water level alarms, spreading grounds and basin inflow.

Deliverables: Submittal of all wiring diagrams, manufacturer's instructions, technical consultant's resume, schematics, panel layout, and O&M manuals. Installation and testing of PLC and RIO, installation and testing of Digital Data Service Radio Modem and Serial Server, Installation and testing of a new Workstation and provide client license to Public Works, install and configure the Alarm feature, Installation, testing and inspection of all wire connections, programming and testing of all system. Testing of integrated GUI.

M. TASK 6: O&M MANUAL

M - 1 GENERAL

Consultant shall furnish the Public Works' Contract Manager upon completion of upgrade work, three reproducible sets of O&M manuals along with an electronic copy. The manuals shall be comprehensive in describing the overall objectives of the upgraded SGTS and shall describe in detail system operations and programming.

M - 2 SYSTEM OVERVIEW

The Consultant shall describe in the O&M manual the system and security architecture for the completed system. The paths of communication from in field locations to Public Works' Headquarters Building and other facilities shall be specified and also the methods of data transmission and the method of data acquisition and the integral components necessary to facilitate data acquisition.

M - 3 SYSTEM COMPONENTS AND EQUIPMENT

The Consultant shall describe in the O&M manual the specified components and equipment employed in the system architecture. The Consultant shall detail specifically for each component the manufacturer, respective model and part numbers, purpose, power source, power type required, manufacturer specifications, data sheets, applicable warranties, and manufacturers suggested operation guidelines. The following is a list of specific components that will be described under this section:

- PLCs
- RIO's

- Radio and Modem Units
- Operator Interface Unit
- Instrumentation
- Antenna Systems
- Power Subsystems
- Converter Units
- Uninterruptable Power Supply

The Consultant shall also include the plan view and layout location of each component comprising the system. The Consultant shall incorporate the final record drawings as signed and certified by such in the O&M manual. Schematics of Systems components and the respective instrumentation schedules shall be incorporated into the O&M manual. The instrumentation schedule shall represent the appropriate instrument signal tag name, the respective channel number, cable pair number, spreading ground water level, gate number, flow rate, instrument type, instrument function description, output signal, supply voltage and type, pressure range, model and part numbers, and depth location of all water level sensors. The schematics shall show wiring configurations of all RIO and with respect to actual wire connections, wire types, specific hardware used along with respective model and part number.

M - 4 DATA ACQUISITION PARAMETERS

The Consultant shall define in the O&M manual the parameters of data acquisition and shall specify the programming methods of triggering instrument reading frequencies, reading frequency set up, and triggering methods modification to meet the needs of Public Works. The Consultant shall describe the communication capabilities of the system and at what thresholds the system will maximize system capabilities so as to not cause system failure.

The Consultant shall specifically define programming logic for each component of the system. The manual shall define the logic parameters of the instruments, PLC, RIO, operator interface, radio, signal converters, and other programmable components.

M - 5 INSTRUMENTATION ALARMS

The Consultant shall define alarms and the detection parameters utilized by the instrument in the O&M manual. The O&M manual shall include steps on how to modify these parameters. Also, the manual shall identify how this information can be extracted from the system to be incorporated with the existing sub-database. The Consultant shall define network information, when the alarm changes state, and the conditions required for clearing the alarm state. The Consultant shall define alarm thresholds for each instrument and at which parameters each instrument is set.

M - 6 MAINTENANCE AND TROUBLESHOOTING

The Consultant shall define in the O&M manual the diagnostic tools available, RIO and all other component diagnostic measurements and their function. The Consultant shall also describe additional software and/or hardware available for troubleshooting. The Consultant shall describe diagnostic processes and their purpose in evaluating system/component failure and or queries.

M - 7 CALIBRATION

The Consultant shall describe in the O&M manual the suggested calibration frequency, calibration methods, and procedures for each instrument/component requiring such. The Consultant shall also record and include all calibration histories as performed in the field for each instrument and for each applicable component of the system.

Deliverables: Operation and Maintenance manuals as structured in scope of work.

N. TASK 7: WORKSHOP MEMORANDUM

The Consultant shall schedule at least two sets of technical workshops for Public Works employees and agents. One workshop shall be at the beginning of the project and one near the end. At least one week prior to the meeting for the first workshop, the Consultant shall submit a memorandum to the Contract Manager describing workshop objectives and goals for review and approval. The second workshop shall utilize the developed O&M manual.

Deliverables: Memorandum detailing workshop objectives and goals.

O. TASK 8A: WORKSHOP SET NUMBER 1

The first workshop set shall be conducted prior to upgrade and presented by a technical specialist thoroughly familiar with Supervisory Control and Data Acquisition (SCADA). This set of workshops is not intended to show exact upgrade of the SCADA but mainly to demonstrate SCADA functionality and confirm the direction of the interface and application development. The Consultant shall provide a minimum of two workshops within this set and must provide in-field and hands on training as necessary. All workshops shall accommodate 10 to 15 people, shall allow for open discussion with Public Works personnel, and shall address the following:

1. SCADA graphical interface alternatives and their development at Rio Hondo Spreading Grounds and Headquarters.
2. The software and operator screens.
3. The SCADA integration programming with the existing Rio Hondo and Headquarters SGTS servers.
4. Methodologies for data acquisition and maintenance of the SCADA.
5. The required standards, screen appearance, and functionality developed for the operator interfaces.

Deliverables: Two technical workshops to demonstrate ADATS functionality, present graphical interface, software, operator screens, system integration programming, operation and maintenance.

P. TASK 8B: WORKSHOP SET NUMBER 2

The second workshop shall also be presented by a technical specialist thoroughly familiar with SCADA and shall include a minimum of two workshops. These workshops shall be performed after upgrade completion and after approval of Acceptance Testing. The Consultant shall show SCADA performance and shall train Public Works personnel. This training will involve education on each instrument and network hardware function and maintenance. The Consultant shall also plan to visit various jobsites to show hands on use and programming of the SCADA components. The workshop shall also present screen navigation of the SCADA program and use of the developed application.

Deliverables: Two technical workshops to demonstrate system performance, training for Public Works personnel, various jobsite visits to demonstrate hands-on use of programming.

Q. TASK 9: SYSTEM INTEGRATION

The upgraded control systems shall be integrated with each component as well as with all existing server and Rubber Dam telemetry systems. Integration testing of the system shall be performed prior to final completion of the project. System integration shall ensure that all components of the system are functional and that all instruments respond to manual or automatic probing. It will also ensure that data is able to be monitored at Rio Hondo Spreading Grounds and Public Works Headquarters buildings. The Consultant shall satisfactorily prove to the Public Works' Contract Manager that the system is fully operational.

Deliverables: Integration of new system into existing HQ interface and server.

R. TASK 10: FINAL TESTING

Once the upgraded monitoring system components are installed and all system components are functional, the Consultant shall perform testing in accordance with the Acceptance Test Plan and must include an I/O verification. This test shall verify that the field signals are wired properly and the various components function correctly to provide necessary signals to the RIO and react correctly to signals received from the RIO. The Consultant shall prepare for this test a sheet, listing in tabular format all relevant signals to be monitored by the system. This sheet shall provide a space wherein both the Consultant and the Contract Manager may sign and date the completion of final testing. The Public Works' Contract Manager reserves the right to require the contractor to repeat testing, or to repeat internal testing in order to validate the data.

Deliverables: Final testing.

S. TASK 11: PROJECT RECORD DOCUMENTS

S - 1 UPGRADE DIAGRAMS

Consultant shall maintain at the jobsite a separate and complete set of diagrams which will be used solely for the purpose of recording changes made in any portion of the work during the course of upgrade regardless of the reason for such change. Changes, as they occur, will be marked on the diagrams on a daily basis. The payment for each task will be withheld until the Public Works' Contract Manager has verified that "as-built" corrections are current. Before final payment is authorized, Contractor shall certify

that all changes in the work are included on the plans and shall deliver such to the Public Works' Contract Manager.

S - 2 RECORD DRAWINGS

1. Consultant shall prepare record drawings based on drawings maintained by the consultant during the upgrade. The record drawings shall indicate the wiring to the replaced controllers and equipment needed to be repaired or replaced to maintain the SGTS functional.
2. Consultant shall prepare a record set of specifications documenting all equipment, installation, materials, and installation methods. For all installed equipment, the name of the manufacturer and model number shall be specified.
3. Consultant shall create and maintain detailed as-built plans and specifications throughout the duration of the project, and shall document in detail their work procedures, sequences of events, methodologies, calibration, testing, and programming. This documentation shall be such that an outside contractor could utilize the documentation to satisfactorily duplicate or repeat the work on this or similar telemetry projects. The documentation shall be compiled into a report titled "Process Documentation" and submitted as a deliverable item.
4. Consultant shall deliver Source Code and Documentation of the Final Acceptance Date.

S - 3 UPDATED HARDWARE/SOFTWARE PROCUREMENT LIST

The complete SGTS, including all components shall be designated in the Hardware/Software Procurement List. All spare components shall be turned over to the Public Works Contract Manager at Final Acceptance and shall be demonstrated to be in good working order.

Deliverables: Upgrade diagrams, record documents, process documentation and source code, updated hardware software procurement list.

T. TASK 12: FINAL ACCEPTANCE AND SYSTEM MAINTENANCE AND SUPPORT

T - 1 CONDITIONS OF FINAL ACCEPTANCE:

In addition to, and in summary of, the satisfactory completion of all deliverables in Section T, Schedule of Tasks and Deliverables,

Final Acceptance of the project shall be granted once the contractor has accomplished the following:

1. Installed, connected, calibrated, and integrated all SGTS hardware.
2. Completed all programming at the PLC sites, San Gabriel Coastal and Rio Hondo Spreading Grounds, and Public Works Headquarters.
3. Conducted successful workshops as required.
4. Performed the application interface programming and configurations for managing the collected data.
5. Submitted all required project documentation, record documentation, source code documentation, and other necessary documentation.
6. Provided results of manual field testing versus automatic sensors for monitored attributes
7. Committed to provide one full year of system maintenance and support beyond Final Acceptance per provisions of Subsection T-2.
8. Proven to the Public Works' Contract Manager that the SGTS is fully operational.
9. SGTS operates for 60 consecutive days in Public Works' production environment, without deficiencies. The 60-day trial period should take place in the months of December through March.

T - 2 WARRANTY

The Consultant shall maintain all replaced instrumentation and system components during the duration of the contract and for a 1 year warranty period from the date of Final Acceptance. The Consultant shall replace all damaged or malfunctioning components of the system upgrades at no cost to Public Works. The Consultant shall be responsible for all cost associated with maintenance of the replaced system components and graphic user interface for the duration of this contract and for a 1 year warranty period from the date of Final Acceptance. The Consultant shall be responsible for all damage to the system and the cost of replacement or repair of any equipment damaged during

installation. The complete system and all spare equipment designated in the equipment list shall be turned over to the Public Works' Contract Manager at the end of this contract and shall be demonstrated to be in good working order. Further details of the Consultant's warranty responsibilities are described on Exhibit H (Maintenance and Support).

Deliverables: Final acceptance, Warranties.

U. SCHEDULE OF TASKS AND DELIVERABLES

Task No. 1- Project Management	
Item	Deliverable Description
H-1	Work Schedule and Monthly Updates
H-2	Management Meetings Minutes
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager has received the proposed work schedule and all supporting information, reviewed it, and approved it.

Task No. 2A- Discovery and Design Effort	
Item	Deliverable Description
I-0	Consultant shall review previous project as-builts, perform field investigation and shall include the approved findings in the Project Design Report to the Contract Manager.
I-0.1	Consultant shall provide the planned security configurations for each installed component or system (if applicable) for review and approval by LACDPW Contract Manager and Information Security Officer.
ACCEPTANCE CRITERIA:	Submittal of Final Design Report and planned security configurations.

Task No. 2B- Submittals	
Item	Deliverable Description
I-1.1	Working Drawings
I-1.2	Shop Drawings
I-1.3	Supporting Information for Exhibit C, Hardware/Software Procurement List (including updates, if applicable)
I-1.4	Acceptance Test Plan
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager has received, reviewed and approved all drawings, supporting information, and test plan.

Task No. 3 – Conduit, Conductor, Service Meter, and Wire Installation	
Item	Deliverable Description
J-1.1	Provide inventory with devices and related appurtenances to be upgraded, repaired and replaced.
J-1.2	Installation of needed, power conductors, signal and control wires
J-2.1	Installation of rigid galvanized steel conduits and PVC coated rigid galvanized steel conduit.
J-2.3	Installation of liquid tight flexible metal conduit.
J-2.4	Installation of fittings and conduit bodies.
J-2.5	Installation of plastic conduit and fittings.
J-2.6	Installation of signal and control wires
J-2.7	Installation of pull boxes.
J-2.8	Installation of galvanized Unistrut channel racks to support conduits.
ACCEPTANCE CRITERIA:	Public Works has received a complete set of functioning conduits, conductors, service meters and wires.

Task No. 4 – Sensor and Communication Cable Installation, Calibration, and Testing	
Item	Deliverable Description
K-1	Installation of all sensors and all communications cables.
K-3	Calibration and testing of all sensors and communication cables.
ACCEPTANCE CRITERIA:	<p>Public Works has received a complete set of functioning sensors and / transducers and cables such as:</p> <ul style="list-style-type: none"> • Water level sensors • Gate position sensors • Battery power sensors

Task No. 5 – Automated Data Acquisition and Control System Installation, Programming and Testing	
Item	Deliverable Description
L-1.2	Submittal of all wiring diagrams, schematics, panel layouts, and O&M Manuals.
L-2.1	Installation and testing of PLC and RIO.
L-2.2	Installation and testing of Licensed Radio Frequency IP Router and Etherport Switch.
L-2.3	Installation and testing of a new Workstation and provide client license to Public Works.
L-2.4	Install and configure the Alarm feature within the existing Wonderware Telemetry Interface.
L-2.5	Installation testing and inspection of all wire connections.
L-3	Programming and testing of all system
L-4	Developing the Graphic User Interface (GUI).
ACCEPTANCE CRITERIA:	<p>The wiring, programming and appurtenances of RIO(s) have been tested to show full functionality to the satisfaction of the Public Works' Contract Manager.</p> <p>The wiring, programming and appurtenances at the PLC sites, Rio Hondo, San Gabriel Coastal Spreading Grounds and Headquarters PLC have been tested to show full functionality to the satisfaction of the Public Works' Contract Manager.</p> <p>The SGTs GUI has been fully integrated with the RDTS GUI.</p> <p>Public Works has received a complete and functioning ADATS system, including the following:</p> <ul style="list-style-type: none"> * 1 Workstation * 1 Client licenses * 1 Alarm management feature setup and activation

Task No. 6 – O&M Manuals	
Item	Deliverable Description
M-1 to M-7	Operation and Maintenance Manuals (three hard copies and one electronic copy in CD format) as structured and described in Scope of Work Section N.
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager has received and approved the Operation and Maintenance Manual (three hard copies and one electronic copy).

Task No. 7 – Workshop Memorandum	
Item	Deliverable Description
N	Memorandum detailing workshop objectives and goals.
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager has received the workshop memorandum and approved the proposed workshop objectives and goals.

Task No. 8A – Technical Workshop Set No. 1	
Item	Deliverable Description
O	Technical Workshops, two minimum, to demonstrate ADATS functionality and confirm the direction of the interface and application development.
O	Present/discuss graphical interface, software, operator screens, system integration programming, operation and maintenance, standards and functionality, and necessary simulations.
ACCEPTANCE CRITERIA:	Public Works has received necessary workshop(s), confirmed that system functionality has been sufficiently demonstrated, confirmed planned operation and maintenance, confirmed interface screens and programming direction, and confirmed all other discussed issues.

Task No. 8B – Technical Workshop Set No. 2	
Item	Deliverable Description
P	Technical Workshop(s), two minimum, to demonstrate system performance.
P	Training for Public Works personnel on each instrument, network hardware function, and maintenance.
P	Various jobsite visits to demonstrate hands-on use of programming, system components, and screen navigation.
ACCEPTANCE CRITERIA:	Public Works has received necessary workshop(s), and confirmed that ample training and hands-on site visit demonstrations have been received to operate the ADATS effectively.

Task No. 9 – System Integration	
Item	Deliverable Description
Q	Integration of new system into existing HQ interface and server.
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager has received and approved documentation demonstrating the successful integration at Public Works Headquarters. A demonstration of the fully functional telemetry system will allow real time monitoring of all system components at the Public Works Headquarters. ITD will verify that the new system does not impact existing systems.

Task No. 10 – Final Testing	
Item	Deliverable Description
R	Final Testing
ACCEPTANCE CRITERIA:	<p>The Public Works' Contract Manager has received and approved (signed) Consultant's tabular test sheet and all supporting documentation demonstrating the following:</p> <ul style="list-style-type: none"> * successful installation of all SGTS components * successful I/O verification, proper wiring, proper field signals * correct functionality of each component * successful instrument response to manual or automatic probing * successful data monitoring at each PLC, San Gabriel Coastal Spreading Grounds, and Public Works Headquarters * SGTS is fully operational * Any other reasonable requirements deemed necessary by Project Manager.

Task No. 11 – Project Record Document	
Item	Deliverable Description
S-1	Upgrade Diagrams
S-2	Record Documents, Process Documentation, and Source Code
S-3	Updated Hardware/Software Procurement List
ACCEPTANCE CRITERIA:	<p>The Public Works' Contract Manager has received and approved both the As-Built record documentation and the Process Documentation.</p>

Task No. 10 – Final Testing	
Item	Deliverable Description
R	Final Testing
ACCEPTANCE CRITERIA:	<p>The Public Works' Contract Manager has received and approved (signed) Consultant's tabular test sheet and all supporting documentation demonstrating the following:</p> <ul style="list-style-type: none"> * successful installation of all SGTS components * successful I/O verification, proper wiring, proper field signals * correct functionality of each component * successful instrument response to manual or automatic probing * successful data monitoring at each PLC, San Gabriel Coastal Spreading Grounds, and Public Works Headquarters * SGTS is fully operational * Any other reasonable requirements deemed necessary by Project Manager.

Task No. 11 – Project Record Document	
Item	Deliverable Description
S-1	Upgrade Diagrams
S-2	Record Documents, Process Documentation, and Source Code
S-3	Updated Hardware/Software Procurement List
ACCEPTANCE CRITERIA:	<p>The Public Works' Contract Manager has received and approved both the As-Built record documentation and the Process Documentation.</p>

Task No. 12 – Final Acceptance, System Maintenance, and Support	
Item	Deliverable Description
T-1	Final Acceptance, Consultant's commitment to provide system maintenance and support for one full year from Final Acceptance per subsection S-2.
T-2	Warranty
ACCEPTANCE CRITERIA:	The Public Works' Contract Manager shall receive in writing the Consultant's warranty to provide maintenance and support for the required one year period. The Public Works' Contract Manager has received and approved all documentation that the items listed in Section S have been successfully completed and provided per this Scope of Work.

EXHIBIT G**Hardware/Software Procurement List****SGTS UPGRADE**

Item No.	Item	Unit of Measure	Quantity
1	Water Level Sensors	EA	25
2	Gate Control Sensors	EA	15
3	Gate Position Sensors	EA	28
4	Conduit	LF	150
5	PLC Siemens S7-1200	EA	23
6	Ethernet Radio	EA	23
7	Workstation	EA	1
8	PLC Software (lump sum), Programming, and Commissioning	LS	1
9	Operator Interface and HQ Server Software (lump sum), and Programming	LS	1

MAINTENANCE AND SUPPORT

SPREADING GROUNDS TELEMETRY SYSTEM UPGRADE

A. GENERAL

1. Capitalized terms used in this Exhibit H (Maintenance and Support) without definition shall have the meanings given to such terms in the Agreement or Scope of Work (Exhibit A).
2. Consultant shall provide Maintenance and Support Services necessary to maintain the standard functionality of the SGTS as described in the Scope of Work (Exhibit A) during the one year period commencing after the Final Acceptance Date. This period is referred to as the Warranty Period in the Scope of Work (Exhibit A).

B. MAINTENANCE AND SUPPORT SERVICES

Maintenance and Support Services shall include Corrective Measures to maintain and/or restore the SGTS standard functionality by providing remedies to issues caused by any malfunction, error, defects, bugs, system outage, or defect in the design, development, or implementation of work; any error or omission, or deviation from the requirements, specifications or mutually agreed upon industry standards, or any other malfunction or error, including the provision of negligent workmanship.

Corrective Measures shall include installation of System Software fixes and enhancements; system recovery; regression testing; reprogramming of PLC, RIO, operator interface, and radio network equipment; repair of wiring; repair and recalibration of sensors; reconfiguration of GUI screens, security and alarm protocols; coordination with Public Works ITD and the existing Rubber Dams Contractor to troubleshoot and implement certain remedies, and; documentation of remedies including, changes to Schematics of Systems, Source Code, and logic parameters of the instruments, PLC, RIO, operator interface, radio, signal converters, and other programmable components. Maintenance and Support Services shall also include in person, telephone or web conference operator support.

Without limiting the foregoing and in addition to the other terms of the Agreement, the following shall apply to Consultant's performance of Maintenance and Support Services:

1. Contract Manager shall request Maintenance and Support Services in person or via telephone, mail, email or any other reasonable means.

EXHIBIT H

2. Consultant shall provide Maintenance and Support Services at Public Works facilities Monday through Friday or if feasible from Consultant's business premises between 7 A.M. to 6 P.M (Pacific Standard Time). Consultant shall contact Contract Manager via telephone or email within two (2) hours of receipt of a request for Maintenance and Support Services to acknowledge the request.
3. Within two (2) calendar days of receipt of the request for Corrective Measures, Consultant shall diagnose the issues and report the diagnosis to Contract Manager in person, via telephone or email. Consultant shall not be held responsible for correcting issues caused by software or hardware that are excluded from the Consultant's responsibilities detailed in the SGTS Scope of Work (Exhibit A).
4. Corrective Measures shall be completed within five (5) calendar days from the earlier of (a) Contract Manager's report of such issues or (b) Consultant otherwise discovering such issues. Consultant shall notify Contract Manager of any delays or the inability to remedy the issues within the specified timeframe stated in this paragraph.
5. Consultant shall notify in person or via email to Contract Manager that remedies to correct issues have been performed. No issues shall be deemed remedied until all necessary remedial action has been completed, tested and approved in writing by Contract Manager.
6. Public Works shall endeavor reasonably to provide Consultant with information and assistance necessary to detect, simulate, reproduce, and correct issues. Nonetheless, Consultant, solely, is responsible for the timely correction of issues.
7. Consultant shall be responsible for contacting and coordinating Corrective Measure activities with the Rubber Dams Contractor if the SGTS issues are dependent on remedies to any component of the Rubber Dam System. Any difficulties contacting or coordinating with the Rubber Dams Contractor shall be immediately brought to the Contract Manager's attention.
8. Consultant shall provide Maintenance and Support Services for Third Party Software that is deemed to be part of the System Software, as described on Paragraph 2 (Third-Party Software License and Warranties) of Exhibit J, regardless of whether the license to such Third Party Software is obtained through Consultant, or is obtained through an extension of an existing Public Works license with such Third Party Software provider.
9. Consultant shall maintain a log of all issues reported by Public Works or otherwise discovered by Consultant, together with a brief description of the issues. Within two (2) weeks after resolution of each issue, to the extent

EXHIBIT H

known or reasonably knowable, Consultant shall provide Public Works with a description of the cause of such issues, together with avoidance procedures.

10. Disagreements between Public Works and Consultant regarding the Maintenance and Support Services shall be resolved through the Dispute Resolution Procedures set forth in the Agreement.

EXHIBIT I

TASK/DELIVERABLE ACCEPTANCE CERTIFICATE

(Name and Address)		TRANSMITTAL DATE
TASK/DELIVERABLE ACCEPTANCE CERTIFICATE Capitalized terms used in this Task/Deliverable Acceptance Certificate without definition have the meanings given to such terms in the body of the Agreement referenced herein		AGREEMENT NUMBER
		TITLE
FROM	TO	
_____ Contractor Project Director (Signature Required)		
Contractor hereby certifies to County that as of the date of this Task/Deliverable Acceptance Certificate, it has satisfied all conditions precedent in the Agreement, including the Exhibits thereto, to the completion of the Tasks and delivery of the Deliverables set forth below, including satisfaction of the completion criteria applicable to such Tasks and Deliverables and County's approval of the Work performed in connection with the achievement of such Task. Contractor further represents and warrants that the Work performed in respect of such Tasks and Deliverables has been completed in accordance with the Agreement, including Exhibit A (Scope of Work). County's approval and signature constitutes an acceptance of the Tasks and Deliverables listed below		
TASK DESCRIPTION (including Task as set forth in the Statement of Work)	DELIVERABLES (including Deliverable numbers as set forth in the Statement of Work)	
Comments: 		
Attached hereto is a copy of all supporting documentation required pursuant to the Agreement, including Exhibit A (Scope of Work), together with any additional documentation reasonably requested by County.		
County Acceptance: NAME _____ SIGNATURE _____ DATE _____ County Project Director		

Distribution:
 Original – Financial Services Copy 1 Contractor Copy 2 County Project Manager Copy 3 - DPW Master Contract File

County of Los Angeles
 Department of Public Works
 [Contractor]

THIRD PARTY SOFTWARE

- 1. Wonderware InTouch TSE**
- 2. Specter Instruments WIN-911**
- 3. Kepware OPC Server**
- 4. Siemens (TIA) Portal Engineering Software**

SOFTWARE DEFINITIONS & PROVISIONS

A. DEFINITIONS

1. "Final Acceptance Date" means the date that Consultant meets the conditions for achieving Final Acceptance as described in paragraph T-1 (Conditions of Final Acceptance) of Exhibit A.
2. "System Hardware" means any and all SGTS hardware appurtenances that are procured or provisioned under obligations of this AGREEMENT.
3. "System Software" means any and all software applications, firmware, programming, upgrades, updates, enhancements, revisions, new version releases, improvements, corrections, bug fixes, patches, and modifications, including Third-Party Software, from time to time conceived, created, and/or developed by or on behalf of Consultant in furtherance of its obligations under this AGREEMENT, and/or any Change Order or Amendment. Unless otherwise expressly noted, "System Software" includes both Object Code and Source Code versions of such software. System Software does not include the computer operating system software.
4. "Source Code" means computer programming code in human readable form that is not suitable for machine execution without the intervening steps of interpretation or compilation, including the tools and developer kits that created, and enable creation of, such code.
5. "Object Code" defined as: "The compiled 'source code' file which contains a sequence of statements or instructions (ie: machine code language) that the computer processor can understand but that is difficult for a human to read or modify"
6. "Third-Party Software" has the meaning set forth in Paragraph 1 (Third-Party Software License and Warranties) of this Exhibit .

B. PROVISIONS

1. Third-Party Software License and Warranties

Notwithstanding Paragraph 8 of the Agreement, ownership of Third-Party Software identified on Exhibit (Third-Party Software) remains with the applicable third party manufacturer. Consultant hereby grants a perpetual and irrevocable license to use, copy, and modify the object code (as it applies to Tetra Tech developed PLC and HMI applications only) versions of the Third Party Software. Upon the Final Acceptance Date, such license shall be a fully-paid license.

Consultant hereby represents and warrants that none of the System Software other than the Third-Party Software is owned by third-parties. Consultant represents and warrants that it has not modified and shall not modify, nor does Consultant have any need to modify, Third-Party Software in order for the SGTS to fully perform in accordance with the requirements and specifications. Consultant represents and warrants that all Third-

EXHIBIT K

Party Software is provided to COUNTY in the same unmodified form as received by Consultant from the applicable third-party. Consultant represents and warrants that Third- Party Software shall, together with the remainder of the SGTS, fully satisfy all of the requirements and specifications without the need for any modification of Third-Party System Software by Consultant or otherwise.

COUNTY acknowledges that it may have to execute certain third-party license agreements in respect of such Third-Party Software. These third-party license agreements shall be at no additional cost to COUNTY.



TETRA TECH

March 15, 2012

County of Los Angeles - Department of Public Works
Architectural Engineering Division
900 South Fremont Avenue, 8th Floor
Alhambra, California 91803-1331
Attn: Ms. Gail Farber - Director

Re: RFP File AE-3 – dated 11/21/2011

Dear Ms. Farber:

In response to the solicitation referenced above, **Tetra Tech, Inc.**, (Contractor) has negotiated the attached Contract for **Spreading Grounds Telemetry System Upgrade Services** (together with all exhibits and attachments thereto, Contract) with the County of Los Angeles (County) on behalf of its **Department of Public Works** (Department).

The Contractor acknowledges and agrees that the County's Board of Supervisors (Board) is the ultimate decision making body for the County and, accordingly, makes the final determination on behalf of the County whether to award or not award a contract and as to the terms of such contract. The Contractor additionally acknowledges and agrees that prior to submitting the Contract to the Board for award consideration, unless otherwise determined to be in the best interests of the County, the Department must complete the review process provided for under Board Policy No. 5.055 (Protest Policy).

The Contractor understands and agrees that as of the date of this letter, absent extraordinary circumstances, the Contractor's **proposal** (is matter of public record, with the exception of those specific portions of the Contractor's **proposal** which have been justifiably defined by the Contractor as business or trade secrets, and plainly marked as "Trade Secret," "Confidential," or "Proprietary." The Contractor further understands and agrees that a blanket statement of confidentiality or the marking of each page of the Contractor's **proposal** as confidential is not sufficient notice of exception and that the Contractor's must specifically label only those provisions of the Contractor's **proposal** which are "Trade Secrets," "Confidential," or "Proprietary" in nature.

The County shall not, in any way, be liable or responsible for the disclosure of any such record or any parts thereof, if disclosure is required or permitted under the California Public Records Act or otherwise by law. In the event County is required to defend an action on a Public Records Act request for any such record or any parts thereof, including, but not limited to, those marked "Trade Secret", "Confidential", or "Proprietary", Contractor agrees to defend and indemnify

Tetra Tech, Inc.

17885 Von Karman Avenue, Suite 500, Irvine, CA 92614

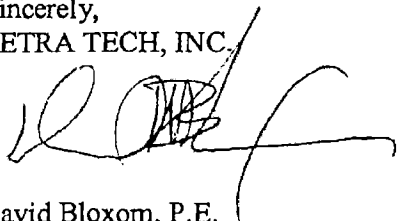
Tel 949.809-5190 Fax 949.809.5010

County, its special districts, elected and appointed officers, employees and other agents from all costs and expenses, including reasonable attorney's fees, in action or liability arising under the California Public Records Act.

The Contractor represents and warrants to the Department and the County as a whole that the Contract is a firm offer of the Contractor, which shall not be changed or revoked pending the Department's completion of the review process under the Protest Policy and submission of the Contract to the Board for award consideration, and pending the Board's determination whether to award the Contract.

The undersigned is an authorized officer of the Contractor who has actual authority to bind the Contractor to each and every term, condition and obligation contained in this letter and/or in the Contract and that all requirements of the Contractor have been fulfilled to provide such actual authority.

Sincerely,
TETRA TECH, INC.



David Bloxom, P.E.
Vice President, Engineering & Architecture Services
Tetra Tech, Inc.

w/Attachments

cc: Ms. Grace Stohs – Contract Analyst

P.S.: Our Project Manager will serve as the contact for this proposal. Please feel free to call him with any questions you may have:

Carl Hoffman
17885 Von Karman Avenue, Suite 500
Irvine, CA 92614-6213
Office: 949.809.5146 Mobile: 858.349.9348



**County of Los Angeles Department of Public Works
RFP Spreading Grounds Telemetry System Upgrade Services**

OVERVIEW

The RFP provides a detailed task list. Tetra Tech and Sub-Contractors is committed to successfully carry out the tasks and items outlined therein. Tetra Tech, TSI and the rest of the team will be responsible for:

- Design
- Programming
- Integration
- Coordination
- Installation
- Testing
- Start-up
- Documentation
- Training
- Reporting

Tetra Tech shall provide a complete, integrated control system for the LA County Spreading Grounds Telemetry System by completing the following major tasks:

1. Coordinate work with the System Integrator (TSI), Electrical Contractor, and LA County Representatives.
2. Create new Programmable Logic Controller (PLC) programs and control system Graphical User Interface (GUI) applications for new plant systems and equipment.
3. Create new GUI Screens for existing PLC programs in existing unmodified areas of the Plant.
4. Integrate all remaining functions of the existing GUI into the new GUI.

Our approach to addressing your SCADA System is to listen, plan, design and implement. We will meet with a broad cross section of your staff to listen to your SCADA and information needs.

WORK PLAN

For the entire project, Tetra Tech's project manager, Mr. Carl Hoffman will utilize the Project Management Life cycle methodology. The life cycle describes what you need to do to manage the project. This approach consists of five process groups. These are:

- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

The project will be broken down into pieces called work packages. Each of these work packages will go through the five life cycle processes. This process approach will be integrated into the project work plan developed at the beginning of the project.

This project requires a consulting firm that can provide leadership and direction throughout the project. The County expects an experienced consultant to collaborate with them, and guide all stakeholders throughout this project. Tetra Tech and TSI specialize in industrial control systems for municipal clients. We understand both the demands and benefits of executing projects of this type and scale, and we look forward to guiding you through this challenging time of upgrading your systems.

Our team brings a proactive approach to managing the change that the County is about to undertake. Tetra Tech proposes immediately following award of contract to schedule and facilitate a Project Kick-off Retreat for the entire team, including L.A. County. The purpose of this meeting is to make certain everyone is familiar with details of the project and the people working on the project. Topics will include:

- Introductions
- Team Roles and Responsibilities
- Define Major Goals and Objectives
- Communication Plan



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- Set Project Norms
- Define Project Constraints
- Define Project Assumptions
- Identify Risks and Response Plans
- Express Major Concerns
- Schedule: Phasing, Influences
- Strategy for Resolving Issues
- Confirm Work Tasks, Priority and Schedule
- Define Project Success Matrix

As part of the initial project development process, the Tetra Tech team will identify a comprehensive list of unique programming tasks required to meet the requirements of the scope of the project. Each task will be system-centric and will encompass all PLC and GUI programming tasks required to deliver a functional control system for each site.

The following process will be used for design, software development, construction, and testing.

Tasks

1. Project Management

The project manager's role is to integrate all the pieces of the project into whole. At the beginning of the project, the project manager, Mr. Carl Hoffman, will prepare a detailed work plan for the project. This is our standard method of operation to ensure all parties on the team are connected with the project scope and expectations. The Work Plan will set forth such vital information as project goals, scope of work, lines of communication, schedule, time and cost management, project controls, quality management, risk management and a plan for implementation and tasks completion. The plan is a summary of internal procedures and processes that will be used to ensure that consistency and quality is maintained throughout all phases of the project.

It is critical to projects, such as this, that the multiple participants stay engaged in the project delivery process and contribute in a timely fashion. Thus, the first communications challenge is to confirm, in concert with L.A. County Public Works, the engineering standards to be followed throughout the project. The project management plan then needs to be effectively communicated to all participants and continuously monitored to keep the project on course.

The lines of communication for the project will emphasize our single-source contact with L.A. County staff by our project manager.

The greatest communication tool is the face-to-face meetings scheduled at significant project milestones. Immeasurable benefit is achieved by directly engaging L.A. County's key staff during critical decision-making stages. Thus, our Project Manager will schedule and conduct meetings to keep L.A. County informed of the project's status, review work-in-progress, share information, discuss project submittals, present findings of technical analyses, receive comments, and obtain decisions and direction. Participants attending these meeting will include those directly involved with the tasks at hand and senior staff who may have special expertise or input to the topics under discussion. All meetings will be documented in meeting minutes prepared by Tetra Tech.

Tetra Tech's project manager will provide monthly schedule updates on the first day of each month and attend monthly meetings with L.A. County for the duration of the project to monitor progress, schedule and budget.

Schedule

One of the key elements to a good work plan is a good schedule. We will work with L.A. County to develop a schedule within 15 working days of the NTP utilizing *Microsoft Project* (See example project below). This schedule will allow for effective tracking of progress through milestones and other similar methods and include *work activities separated by task by both prime and sub-contractors and procurement of materials and equipment*. We will identify each key element and will expand on those elements as may be necessary to effectively track the project. This project has already been subdivided into distinct elements per the scope of work in the RFP. We anticipate we will develop a detailed



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Breakdown of Hours to Complete Tasks outlined in Scope

Please see the spreadsheet on the next page for the anticipated effort (Per 8.2.5.2) to complete tasks outlined in the scope along with Tetra Tech and TSI's current workload capability.

Estimation of hours to complete		
Task # 1 Project Management		
Item	Deliverable Description	Duration
B-1A	Work Schedule	16 hours
H-1B	Monthly Updates	4 hours per month of project duration
H-2	Management	12 Hours per month of project duration
Task # 2 Submittals		
Item	Deliverable Description	Duration
I-1.1	Working Drawings	See breakdown below
I-1.1A	Site Plans	32 hours per site
I-1.1B	Schematics	24 hours per site
I-1.2	Shop Drawings	32 hours per site
I-1.3	Supporting Information for Exhibit C, Hardware/Software Procurement List	40 hours
I-1.4	Acceptance Test Plan	16 hours
Task # 3 Conduit, Connector, Service Meter, and Wire Installation		
Item	Deliverable Description	Duration
J-1.1	Provide inventory with devices and related apparatuses to be upgraded, required and replaced.	16 hours per site
J-1.2	Installation of needed power conductors, signal and control wires	44 hours per site
J-2.1	Installation of rigid galvanized steel conduits and PVC coated rigid galvanized steel conduit.	32 - 160 hours (depending on site)
J-2.2	Installation of liquid tight flexible conduit	16 hours per site
J-2.4	Installation of fittings and conduit bodies.	16 hours per site
J-2.5	Installation of Plastic conduit and fittings.	80 - 240 hours (depending on site)
J-2.6	Installation of signal control wires	32 hours per site
J-2.7	Installation of pull boxes.	16 hours per site
J-2.8	Installation of galvanized Unistrut channel racks to support conduit	16 hours per site
Task # 4 Sensor and Communications Cable Installation, Calibration and Testing		
Item	Deliverable Description	Duration
K-1	Installation of all sensors and all communications cables	16 hours per site
K-3	Calibration and testing of all sensors and communication cables	10 hours per site
Task # 5 Automated Data Acquisition and Control System Installation, Programming, and Testing		
Item	Deliverable Description	Duration
L-1.2	Submittal of all wiring diagrams, schematics, panel layouts, and O&M Manuals.	10 hours
L-2.1	Installation and testing of PLC RIO	16 hours per site
L-2.2	Installation and testing of Digital Data Service (DDS) modem.	2 hours per site
L-2.3	Installation and testing of main Frequency radio modem and serial server.	4 hours per site
L-2.4	Installation and testing of a new Workstation and provide client license to Public Works.	60 hours
L-2.5	Install and configure the Alarm feature within the existing Wonderware Telemetry Interface.	16 hours
L-2.6	Installation testing and inspection of all wire connections.	2 hours per site
L-3	Programming and testing of all systems.	40 hours per site
L-3A	Radios	6 hours per site
L-3B	PLC	32 hours per site
L-4	Developing the Graphic User Interface (GUI)	See breakdown below
L-4A	Wonderware development	32 hours per site
L-4B	Keypace Configuration	40 hours total
Task # 6 O&M Manuals		
Item	Deliverable Description	Duration
M-1 to M-7	Operation and Maintenance Manuals (three hard copies and one electronic copy in CD format)	60 hours
Task # 7 Workshop Memorandum		
Item	Deliverable Description	Duration
N	Develop memorandum detailing workshop objectives and goals.	3 hours
Task # 8 Technical Workshop Set #1		
Item	Deliverable Description	Duration
O	Technical Workshops, two minimum, to demonstrate A/PATS functionality and confirm the direction of the interface and application development. At these workshops, we will present/discuss graphical interface, software, operator screens, system integration programming, operation and maintenance, standards and functionality, and necessary simulations.	1 hour per workshop
Task # 8B Technical Workshop Set #2		
Item	Deliverable Description	Duration
P-1	Technical Workshops, two minimum, to demonstrate system performance.	1 hour per workshop
P-2	Training for Public Works personnel on each instrument, network hardware function, maintenance.	8 hours
P-3	Various job site visits to demonstrate hands-on use of programming, system components, and screen navigation	6 jobsite visits @ 9 hours per day
Task # 9 System Integration		
Item	Deliverable Description	Duration
Q	Integration of new Spreading Grounds Telemetry System into existing IIQ Interface and server	200 hours
Task # 10 Final Testing		
Item	Deliverable Description	Duration
R	Final Testing	8 hours per site
Task # 11 Project Record Documentation		
Item	Deliverable Description	Duration
S-1	Upgrade Diagrams	6 hours per site
S-2	Record Documents, Process Documentation, and Source Code	6 hours per site
S-3	Updated Hardware/Software Procurement List	8 hours
Task # 12 Final Acceptance, System Maintenance, and Support		
Item	Deliverable Description	Duration
T	Final Acceptance, Consultant's commitment to provide system maintenance and support for one full year from final accep	80 hours allocated for first year of support



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Current Workload and Capability/Commitment

Tetra Tech IWR's Electrical and Controls Engineering group current workload capacity.

	<u># Staff</u>	<u>Yearly Capacity (Hrs)</u>	<u>Backlog (Hrs)</u>
Engineering/PM	17	35,360	17,184
Drafting/Support/O&M	8	16,640	6,442

TSI's Engineering, Field Service, Shop Fabrication, and Support current workload capacity

	<u># Staff</u>	<u>Yearly Capacity (Hrs)</u>	<u>Backlog (Hrs)</u>
Engineering/PM	13	27,040	4,659
Shop Fabrication	5	10,400	8,389
Field Service	6	12,480	11,050
Drafting/Support/O&M	4	8,320	4,679

2. Submittals

Initial Discovery

To begin the project, our team will perform the following tasks in this phase of development:

▪ ~~Existing Site Evaluation and Discovery~~

~~A thorough review of the existing site conditions and installations will be conducted to identify potential approaches and issues on a site-by-site basis.~~

▪ ~~Process Control Strategy (PCS) Review~~

~~A thorough review of the existing functional control strategies for each site will be conducted.~~

▪ Tetra Tech/County Review

Once the internal PCS review is complete, our team will meet with the L.A. County staff to review our understanding of the construction and PCS requirements and work through any questions, clarifications or suggestions for improved system performance.

"Working Drawing" Design Development Workshop

Once the initial requirements are defined, a workshop will be held to work through the detailed requirements for each site for optimum functionality.

The workshop will begin with a presentation by the Tetra Tech/TSI team to review the results of the site discovery, including a detailed review of the requirements for each site that will highlight proposed design and construction strategies as well as any potential issues that may arise at each site. The workshop will then be an open forum for discussion for the City to provide whatever information that may arise out of the presentation.

The result of the workshop will be a comprehensive list of the site installation requirements for each site. Standard engineering details will also need to be established and accepted by County staff.

A memorandum will be developed and submitted to the County for final approval prior to commencing design development.

"Working Drawing" Design Development

Upon final approval of the design development requirements memo, engineering staff will then actually begin to develop drawings.



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Tetra Tech plans to develop drawings to 50% completeness for review by County Staff. Prior to submission to The County, Tetra Tech will follow its' aforementioned, rigorous QC process. It is anticipated that the County will review the documents for a period of 1-2 weeks and the team will then meet again. This meeting will be intended to discuss any questions the County has about the design as well as any clarifications necessary for the design team to proceed.

A memorandum will be developed and submitted to the county following the conclusion of the 50% design coordination meeting. Once The County agrees to the memorandum of understanding, 100% design development will ensue.

The same approach will be taken following 100% design development and prior to final design documentation production, a 100% memorandum of understanding of the County's comments will be developed.

"Shop Drawing" Development

After final approval of the design development drawings, they will then be distributed to TSI and FM Electric so that they may proceed to develop their shop drawings accordingly. Shop drawings shall include the following

1. Necessary conduit, conductor, and wire as specified in the scope of work section II subsection J-1.2
2. Necessary sensors and communication cable as specified in the scope of work section II subsection K-1.2
3. Necessary Spreading Grounds Telemetry System equipment as specified in the scope of work section II subsection L-1.1

The shop drawings will be reviewed by Tetra Tech to ensure compliance with the design development drawings. After Tetra Tech's review, these drawings will be distributed in the same manner as the design development drawings. However, only one deliverable to the County will be necessary for comment. After comments are addressed, a final memorandum of understanding will be distributed to the County before construction.

Supporting information

Proper supporting information will be submitted to the County per Section 2 Subsection I-1.3. Data supporting Exhibit E including updates will include, but not limited to: Catalog sheets, manufacturer's brochures, technical bulletins, specifications, equipment cut sheets, diagrams.

Acceptance Test Plan

Tetra Tech, TSI and team will formulate an acceptance test plan in close coordination with designated representatives of the County as well as the equipment and software vendors.

3. Potential Conduit, Conductor, and Wire Installation

All potential new conduit, conductor, and wire installation will adhere to the specification called out in section J of exhibit A- Scope of Work and exhibit D.

4. Sensor and Communication Cable Installation, Calibration, and Testing.

F.M. Electric possesses extensive experience installing the necessary sensors and communication cables as highlighted in the experience. Also, see the example of the calibration sheet included in the additional data section. All equipment and testing Data will be done in accordance with Section K of exhibit A- Scope of Work. Additionally, refer to testing information included in *Task 5*.

5. Automated Data Acquisition and Control System Installation, Programming, and Testing.

All Automated Data Acquisition and Control System Installation, programming and testing will adhere to the specification called out in section II subsection L.

Software Design Development Workshop
See Task 8

Software Design Development

Upon final approval of the software development requirements memo, design and programming staff will actually implement the control strategies and data handling requirements utilizing Siemen's S7, InTouch, Kepware, and the required reporting software.



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Network security procedures will be closely coordinated with County Staff designated by the Contract manager. It is advisable that a workshop is held with the Tetra Tech's PM, Tetra Tech's Programmer, County PM, and County Staff member familiar with the County's security policies.

As detailed in Task 8 and above, Tetra Tech has planned for a number of review meetings and workshops during the design process to aid in developing details and communicating the direction of the design. These workshops are intended to limit any mid-course corrections that may be necessary to fulfill the LA's preferences and requirements.

Program Verification: Software Pre-startup Acceptance Testing

Program verification will take place in two stages: In-house Simulation Testing and Factory Acceptance Testing. In-house testing is performed to ensure the smoothest possible Factory Acceptance Test

In-house Simulation Testing

Complex logic sequences will be thoroughly tested before being put into operation. Testing and debugging of PLC and GUI logic will be a very important aspect of this project to limit on-site time required by our programming team and to ensure smooth transitions for converted programs.

During the program verification phase of the project, Tetra Tech will conduct in-house preliminary testing prior to factory checkout by executing programs developed for this project. The test will utilize an I/O simulator to assure a complete functional test. Tetra Tech will simulate input and output devices as necessary to verify the following:

- Correct control loop response
- Correct equipment status GUI display
- Correct equipment GUI control function
- Correct alarming per the alarm list
- Correct data logging, display and reporting
- Correct inter-processor communication

Factory Acceptance Testing (FAT)

The next step in Program Verification for GUI and PLC software strategies will be demonstrated on-site at the panel fabrication shop, using representative hardware provided by the system supplier. We will modify strategies as necessary to operate on the test hardware provided, and stage tests to demonstrate proper operation of the strategies. The test will utilize an I/O simulator to assure a complete functional test. The new control panels and associated wiring & hardware will be factory tested on-site at the panel fabrication shop to ensure correct operation before the control panel is shipped.

Our programming efforts will be coordinated with the construction contractor to guarantee that programming will be completed prior to the testing, training and startup schedule required for each project segment.

Field Installation of software

Once FAT testing is complete, software will be loaded into the appropriate on-site equipment. PLC programs will be loaded at this point primarily to support I/O check-out by TSI. GUI screens will be loaded at this point as well.

Siemen's PLC Programs

The primary purpose of this task is to prepare the PLCs on site for I/O check-out.

The methods used and procedures followed for this will vary depending on the site. A written plan will be developed detailing the sequence of actions required to ensure that system operation is not interrupted.

InTouch GUI

During the site-installation process on this project, we will maintain two applications on site. The first will be the live application used by Operations staff to monitor and control the plant. The second will be a development application used to test new software.



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Testing

Once software is loaded, TSI will test all physical equipment for correct operation. This includes instruments, gate operation, etc. This testing is performed without any control from the PLC or SCADA system.

It is expected that during this phase, the team will verify all loops through to the PLC using the software loaded in the PLC by Tetra Tech.

I/O Testing.

Upon verification that equipment is functional, Tetra Tech's startup team will verify each physical I/O point from device to GUI screen. Devices will be physically/mechanically manipulated to ensure proper scaling for analogs and state for digital I/O.

To ensure that all I/O is tested, an I/O spreadsheet will be developed for each site. This spreadsheet will be used as a check list to make certain that all I/O functions as expected and is properly configured in the PLC and GUI systems.

Thorough I/O check-out combined with detailed in-house and FAT testing will ensure that once equipment is brought on-line, actual startup tasks will be limited to tuning control loops, setting timers, etc. Thorough I/O check-out is essential.

L.A. County personnel should be present for the I/O testing and provide sign-off along with Tetra Tech personnel at the completion of each I/O point test.

Equipment Functional Testing

Once I/O has been verified, equipment level system components will be systematically checked for correct operation.

LA personnel should be present for the equipment functional testing and provide sign-off along with Tetra Tech personnel at the completion of each equipment functional test.

During the testing process, the start-up team will need to specifically consider the impact on the operations and the sequencing that will be required to minimize disruption of the normal delivery of water to the Spreading Grounds. Our team will work to understand the importance of maintaining system operations.

Our programming and testing efforts will be coordinated with the schedule to guarantee that programming will be completed prior to the testing, training and startup schedule required for each project segment.

Our team is committed to getting The County staff to take ownership of the system, provide constructive input and help guide our team to the end product. This approach allows the end user satisfaction that they had input into the final product.

"As needed services"

Regarding the request in the RFP for the ability to complete "as-needed services for instrumentation installation and troubleshooting, TSI's Field Service Coordinator is on call 24 hours a day, 365 days a year. Their Coordinator has access to 6 full time Field Service Technicians that are performing service work from the North Slope of Alaska to the Mexican border. Between Tetra Tech and TSI, we have over 40 Controls engineers that will be able to support the field technicians as well for any of the hardware and software needs. Tetra Tech, TSI, and our team strive to have dedicated people to cover any support issues so that someone new doesn't have a learning curve----the person that shows up will always know your system.

6. O&M Manuals

Tetra Tech will provide three hard copies and one electronic copy in CD format of the Operation and Maintenance manuals to LA County Representative for preliminary review. When the LA County Representative is satisfied that these are complete and properly prepared, the completed set of Manuals will be separately bound in heavy duty elliptical 3-ring binders. The binder covers with titled "Operation and Maintenance Manuals", project name, date and revision



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number. The binders will be internally subdivided with permanent page dividers with tab titling clearly printed under reinforced laminated plastic tabs.

As a minimum, the manual will provide operating instructions for the control system will include:

- GUI screen prints.
- Operator/End-user documentation (step-by-step procedures including images of Wonderware screens where needed) for all plant systems.
- Instructions describing the local alarm system.
- Instructions about process control screens
- Instructions for operation of the automated reports.
- System Components and equipment
- System Overview
- Data Acquisition Parameters
- Instrumentation Alarms
- Maintenance and Troubleshooting
- Calibration Information

Tetra Tech will turn over final updated revisions reflecting the as-built conditions of each site.

Finally, Tetra Tech will provide System Reference Documentation Manuals. These are the Manufacturer's manuals and parts lists for all products installed under this contract.

7. Workshop Memorandum Development

The project requires that at least two workshops are held with between the consultant and County Staff. It is anticipated that at least one of these will occur at the beginning of the project, and one near the conclusion. Prior to the first workshop, Tetra Tech will submit a memorandum highlighting the goals and objectives of the first workshop to the contract manager at least one week prior to the first workshop. The second workshop towards the end of the project, shall utilize the O&M Manual as a basis.

8. Workshops

Workshop set 1

These workshops will include a minimum of two workshops. Once the initial process requirements and programming approach are defined, a workshop will be held to work through the detailed functional requirements for each site to achieve optimum functionality.

Each workshop will begin with a presentation by the Tetra Tech team to review the results of the detailed review of the required functionality for the area. The workshop will then be an open forum for discussion of the specific requirements for process control, process displays, operator interface, alarming, data logging, security configurations etc.

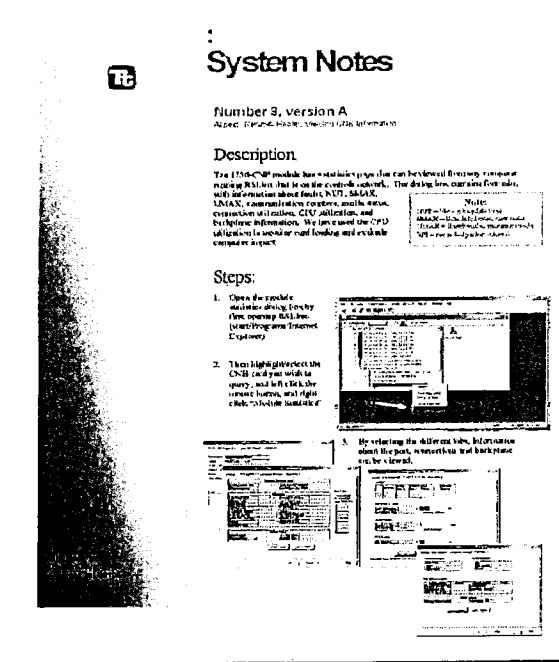
The result of the workshop will be a comprehensive, detailed list of the PLC and InTouch GUI programming requirements for the each site and an agreed upon, standard approach for implementing and proceeding with the system integration development.

Workshop set 2

The second workshop will include a minimum of two workshops. These workshops shall be performed after upgrade completion and after approval of Acceptance Testing. Tetra Tech will highlight SCADA performance and train Public Works personnel. This training will involve training on each instrument and network hardware function and maintenance. Tetra Tech and TSI also plan to visit various jobsites to show hands on use and programming of the SCADA components. The workshop shall also present screen navigation of the SCADA program and use of the developed application



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Our extensive owner training includes easy to use system notes such as the example above.

These training sessions will help maintenance staff troubleshoot common problems and help them become self-sufficient troubleshooting hardware and software.

Computer System Administration

We also typically conduct training sessions for our clients employees involved in the maintenance of the computers installed in conjunction with SCADA project. The configuration documentation of all server and workstation computers is usually covered. Security and recovery procedures are emphasized. The location of application and historical data files is listed and backup and archive routines outlined. We review the computer naming and addressing schemes associated with local and wide area networking.

Operator Training

For our Operator training, we emphasize the use of the human-machine interface for controlling and adjusting the treatment process. The proper response to critical alarms is discussed and the operation of all newly installed hardware is reviewed. All sessions are conducted prior to each improvement being put on line.

9. System Integration

The upgraded control systems will be integrated with each component as well as with all existing server and Rubber Dam telemetry systems in close coordination with the County's existing contractor. Integration testing of the system will be performed prior to final completion of the project. System integration shall ensure that all components of the system are functional and that all instruments respond to manual or automatic probing. Tetra Tech will also ensure that data is able to be monitored at Rio Hondo Spreading Grounds and Public Works Headquarters buildings. *See Task 5 for more details on testing approach*

10. Final Testing



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Once the upgraded monitoring system components are installed and all system components are functional, the team will coordinate final testing in accordance with the test plan. All proper testing methods will be followed per the specifications in Exhibit A. For detailed please refer to detailed testing strategies previously highlights in Task 5.

11. Overall Performance Acceptance Testing

Tetra Tech commits to adhere to the project record documentation requirements set forth in Section II Subsection S of Exhibit A

12. Final Acceptance and System Maintenance and Support

Tetra Tech's Team commits to adhere to the conditions set forth in Section II Subsection T. of Exhibit A.

Price Proposal

Revision Date:
May 10, 2012

Spreading Grounds Telemetry System Upgrade

Provide design/build services to upgrade existing ARAMS software and Generation MICS with modern SCADA components
Submitted to: Los Angeles County - Dept. of Public Works - WRD (Attn: Eric Baul - PM)

Contract Type: T&M

Revision Date: May 10, 2012		Labor Plan		Price Summary / Totals	
Spreading Grounds Telemetry System Upgrade		7 Labor Resources		Task Pricing Totals	
Provide design/build services to upgrade existing A&MIS software and equipment MCUs with modern SCADA components		Project Manager (Carl Hoffman)		Specify Add'l Fees on Setup	
Submitted for Los Angeles County - Dept. of Public Works - WRD (Attn: Eric Saul PM)		Controls Engineer (Andy Thiel)		Technology Use Fee (2,686 hrs) = \$8,058	
Contract Type: TBM		Controls Designer (Brad Fray)		Total Price	
Project Phases / Tasks		E&C Designer (Edgar Reyes)		Pricing by Resource	
Mobile To Project		Administrative Asst. (Shari Lione)		Task Pricing Totals	
Receive Executive PSA and RFP		Labor Rate \$/hr		Labor	
Task #1 - Project Management		Subs		Travel	
Create PIF and Mobile Project Team		Mats & Equip		OOB	
Project Kick Off Meeting		Task Pricing Totals		Totals	
H-1 Work Schedule and Monthly Updates		Labor		Subs	
H-1.1 Develop Work Breakdown Structure		Travel		Mats & Equip	
H-1.2 Develop Work Breakdown Structure		OOB		Task Pricing Totals	
H-1.3 Monthly Review of Progress		Labor		Subs	
H-2 Management Mtgs. & of Subs		Travel		Mats & Equip	
Task #2A - Discovery & Design Effort		OOB		Task Pricing Totals	
Field site investigations		Labor		Subs	
Review of previous project architecture		Travel		Mats & Equip	
Meet with I&C OEM for consultation		OOB		Task Pricing Totals	
Working with O&W to present findings		Labor		Subs	
Prepare Revised Security Configurations		Travel		Mats & Equip	
Issue Tech Memo capturing SOW changes		OOB		Task Pricing Totals	
Prepare & O&W Preliminary Design Report		Labor		Subs	
Submit PDR & Solicit Client Feedback		Travel		Mats & Equip	
Incorporate Feedback into Final Design		OOB		Task Pricing Totals	
Prepare & O&W Final Design Report		Labor		Subs	
Submit final Design Report for Approval		Travel		Mats & Equip	
Task #2B - Submittals		OOB		Task Pricing Totals	
I-1.1 Working Drawings		Labor		Subs	
Review O&W's Architectural Drawings		Travel		Mats & Equip	
Install as-built Paper Markings of existing		OOB		Task Pricing Totals	
Review P&ID & E&C Installation Details		Labor		Subs	
Review Electrical Working Drawings (if available)		Travel		Mats & Equip	
I-1.2 Shop Drawings		OOB		Task Pricing Totals	
I-1.3 Supporting Information for Exhibit C		Labor		Subs	
I-1.4 Acceptance Test Plan		Travel		Mats & Equip	
Task #3 - Conduit, Conductors or Service Meters		OOB		Task Pricing Totals	
I-1.1 Provide inventory of defective devices		Labor		Subs	
I-1.2 Installation of needed power cond.		Travel		Mats & Equip	
Task #4 - Sensors & Communication Cables		OOB		Task Pricing Totals	
K-1 Procurement & installation of all S & CC		Labor		Subs	
K-3 Calibration & testing of all S & CC		Travel		Mats & Equip	
Task #5 - ADATS Programming & Testing		OOB		Task Pricing Totals	
I-1.1.1 Wiring Diagrams		Labor		Subs	
I-1.1.2 Schematics		Travel		Mats & Equip	
I-1.1.3 PLC Programs		OOB		Task Pricing Totals	
I-1.1.4 PLC Programs		Labor		Subs	
I-1.1.5 PLC Programs		Travel		Mats & Equip	
I-1.1.6 PLC Programs		OOB		Task Pricing Totals	
I-1.1.7 PLC Programs		Labor		Subs	
I-1.1.8 PLC Programs		Travel		Mats & Equip	
I-1.1.9 PLC Programs		OOB		Task Pricing Totals	
I-1.1.10 PLC Programs		Labor		Subs	
I-1.1.11 PLC Programs		Travel		Mats & Equip	
I-1.1.12 PLC Programs		OOB		Task Pricing Totals	
I-1.1.13 PLC Programs		Labor		Subs	
I-1.1.14 PLC Programs		Travel		Mats & Equip	
I-1.1.15 PLC Programs		OOB		Task Pricing Totals	
I-1.1.16 PLC Programs		Labor		Subs	
I-1.1.17 PLC Programs		Travel		Mats & Equip	
I-1.1.18 PLC Programs		OOB		Task Pricing Totals	
I-1.1.19 PLC Programs		Labor		Subs	
I-1.1.20 PLC Programs		Travel		Mats & Equip	
I-1.1.21 PLC Programs		OOB		Task Pricing Totals	
I-1.1.22 PLC Programs		Labor		Subs	
I-1.1.23 PLC Programs		Travel		Mats & Equip	
I-1.1.24 PLC Programs		OOB		Task Pricing Totals	
I-1.1.25 PLC Programs		Labor		Subs	
I-1.1.26 PLC Programs		Travel		Mats & Equip	
I-1.1.27 PLC Programs		OOB		Task Pricing Totals	
I-1.1.28 PLC Programs		Labor		Subs	
I-1.1.29 PLC Programs		Travel		Mats & Equip	
I-1.1.30 PLC Programs		OOB		Task Pricing Totals	
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I-1.1.45 PLC Programs		OOB		Task Pricing Totals	
I-1.1.46 PLC Programs		Labor		Subs	
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I-1.1.52 PLC Programs		Labor		Subs	
I-1.1.53 PLC Programs		Travel		Mats & Equip	
I-1.1.54 PLC Programs		OOB		Task Pricing Totals	
I-1.1.55 PLC Programs		Labor		Subs	
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I-1.1.234 PLC Programs		OOB		Task Pricing Totals	
I-1.1.235 PLC Programs		Labor		Subs	
I-1.1.236 PLC Programs		Travel		Mats & Equip	
I-1.1.237 PLC Programs		OOB		Task Pricing Totals	
I-1.1.238 PLC Programs		Labor		Subs	
I-1					

[illegible]

Cost-Price Model - Calculations & Notes

AE-3 Spreading Grounds Telemetry System Upgrade

Provide design/build services to upgrade existing ARAMIS software and Geomation MCUs with modern SCADA components

Assumptions, Comments, etc.	
1	Programming and construction services will be performed in accordance with the following bid documentation: 1. County of Los Angeles, Dept. of Public Works, RFP for Spreading Grounds Telemetry System Upgrades Services - Scope of Work - Exhibit A dated: November 21, 2011 2. Drawings Package - Exhibit B and C; Sensor List and Minimum Server Requirements - Exhibit D; InvenSys Wonderware InTouch Software Specifications - Exhibit E; and LADPW Spreading Grounds Telemetry Parallel Networks drawing - Exhibit F
2	That Item I-1 Submittals will not be available 20 days after NTP and that Item I-1.1 is based on qty (50) drawing sheets total. Availability subject to acceptance of project schedule.
3	That item J-1.1 reflects our assumption NOT to visit all 23 field sites for verification / inventory of all SGTs - I&C devices and related appurtenances to be upgraded, repaired and replaced. This 'as-needed' effort will be dealt with during start-up & commissioning on a FCO (Field Change Order) per item basis.
4	That Item J-1.2 reflects our assumption to provide limited (ie: not to exceed \$9,464.00.00) installation of needed power conductors, signal and control wires resulting from Item J-1.1's discovery efforts
5	That Item K-1 is based on our assumption to replace broken water level sensors, gate valve position sensors and battery power sensors as required; not to exceed \$89,600.00.
6	That Item K-3 is based on providing calibration and testing of all sensors and communication cables provided under Item K-1; not to exceed \$13,750.00.
7	That Item L-1.2 is assumed to be covered under Task #2 - Submittals and Task #6 - O&M Manuals
8	That Item L-2.1 is for supplying, installation and testing of twenty-three (23) Siemens Model S7-1200 PLCs and their RID on new back-panels to be mtd. into existing SGTs cabinets
9	That Item L-2.2 is for replacing twenty-three (23) currently installed Teledesign 4000 radios with CalAmp Viper 50 radios and Siemens CSM1277 etherport switches at the San Gabriel Coastal and Rio Hondo Coastal Spreading Grounds; not to exceed \$45,080.00.
10	That Item Q is assumed to require no additional software in order to integrate the new Spreading Grounds Telemetry System into existing HQ Interface and server.
11	It's assumed that TetraTech will not obtain any permits.
12	TetraTech's level of effort is limited to the aforementioned scope of services. Costs incurred due to conditions beyond TetraTech's control may result in additional charges billed on a Time and Material basis.
13	TetraTech will not be responsible for tuning any existing telemetry equipment for improved communication performance as part of this project.
14	This fee proposal is based on TetraTech standards. Plans, specifications, and other deliverable documents will be prepared following TetraTech drafting and CAD standards, and text document formatting.
15	We exclude any specification section where it calls out for "Any additional hardware or software that may be required to successfully verify system operation shall be supplied at no additional cost."
16	Excessive work interruption(s) by others that delay the provision of contracted services by TetraTech may result in additional service charges billed on a time and materials basis.
17	Prior to TetraTech commencing work on programming scope, CLIENT's staff shall furnish any additional complete set of final construction plans and specifications, URS - O&M Manual circa 2005, along with the contract or notice to proceed.
18	Tetra Tech will hire Jack Parent - Principle Engineer @ A Thousand Hills, Inc. as a sub-consultant as per Scope of Work - Exhibit A; Section C. SCOPE AND CONTROL OF WORK; C-1 WORK DESCRIPTION; C-1.1 General; ¶ "Work with the existing Public Works contractor, up to 100 hours of coordination, to develop an integrated Wonderware program that serves as an interface for the SGTs and Rubber Dam telemetry systems."

The following Items are unit pricing:

- J-2.1 Installation of rigid galvanized steel conduits and PVC coated rigid galvanized steel conduit.
\$ 9,401 Cost per 100 feet
- J-2.3 Installation of liquid tight flexible conduit.
\$ 201.00 Per installation of three feet of seal tight and two connectors
- J-2.4 Installation of fittings and conduit bodies.
\$ 143.00 per fitting as required
- J-2.5 Installation of plastic conduit and fittings.
\$ 15.40 per foot
- J-2.6 Installation of signal control wires.
\$ 5,842 Per Site Average Replacement of analog signals
- J-2.7 Installation of pull boxes.
\$ 4,635 per box With 200 ft Conduit per specification Sheet C.53 & Notes 1-5 Sheet C-4
- J-2.8 Installation of galvanized Unistrut channel racks to support conduit.
\$ 1,275 Per Site

ENCLOSURE B



RICHARD SANCHEZ
CHIEF INFORMATION OFFICER

Office of the CIO
CIO Analysis

NUMBER:

CA 12-13

DATE:

6/19/2012

SUBJECT:

SPREADING GROUNDS TELEMETRY SYSTEM UPGRADE

RECOMMENDATION:

☒ Approve

☐ Approve with modification

☐ Disapprove

CONTRACT TYPE:

☒ New contract

☐ Sole Source

☐ Amendment to Contract #: Enter contract #.

☐ Other: Describe contract type.

CONTRACT COMPONENTS:

☒ Software

☒ Hardware

☐ Telecommunications

☒ Professional Services

SUMMARY:

Department executive sponsor: Diego Cadena, Deputy Director, Public Works

Description: Contract with Tetra Tech Inc. to upgrade telemetry systems at groundwater recharge facilities in the Cities of Pico Rivera, Bell Gardens, Glendora, and Azusa.

Contract amount: \$750,000

Funding source: Flood Control District Budget

☐ Legislative or regulatory mandate

☒ Subvened/Grant funded: 100%

**Strategic and
Business Analysis**

PROJECT GOALS AND OBJECTIVES:

The Spreading Grounds Telemetry System (SGTS) Upgrade will replace the unreliable and obsolete existing telemetry system with industry-standard software, programmable sensors, radios, and other equipment. It also provides a full year of the implementation consultant's support and maintenance following system acceptance.

BUSINESS DRIVERS:

This upgrade to the existing telemetry system will improve efficiency in the operations of the Spreading Grounds, provide real-time water level and flow status, and enable remote control of operations, thereby improving efforts to recharge the groundwater supply on behalf of the Flood Control District (LACFCD).

	<p>PROJECT ORGANIZATION:</p> <p>The project has DPW executive sponsorship. It will be monitored for performance by the business unit through an engineering project manager. The project has been approved through the Department's IT Governance Committee, and its progress will be tracked by DPW's IT Project Management Office through regular status reports.</p> <p>PERFORMANCE METRICS:</p> <p>The consultant's work performance will be measured against acceptance criteria established for each deliverable defined in the Scope of Work (SOW). The consultant is required to develop a test and acceptance plan that is subject to approval by the Department. The new SGTS will be tested according to that plan. The SOW calls for completion of a successful 60-day production trial period by the end of March 2013.</p> <p>STRATEGIC AND BUSINESS ALIGNMENT:</p> <p>This project is in alignment with County Goal 1 (Organizational Effectiveness) and DPW's Strategic Focus Areas 2 and 3 (Invest in Sustainability and Innovate). The upgrade will enable DPW to more efficiently and reliably fulfill its responsibility to operate the Spreading Grounds facilities for LACFCD.</p> <p>PROJECT APPROACH:</p> <p>The SOW clearly calls for the commercial, off-the-shelf products. The consultant will integrate the upgraded SGTS and existing Rubber Dam telemetry systems using Wonderware, a suite of industry-standard software used in the utilities industry. The implementation will occur over time based on 12 identified tasks with associated deliverables, completing in March 2013. Following system acceptance, the consultant will provide maintenance services for one year.</p> <p>ALTERNATIVES ANALYZED:</p> <p>The Department considered attempting to bring the existing SCADA system into operation using the incumbent ARAMIS software and Geomation MCU's. However, the lack of vendor support and difficulty of use and maintenance of the existing system resulted in the plan to upgrade the system to an industry-standard platform.</p>
Technical Analysis	<p>ANALYSIS OF PROPOSED IT SOLUTION:</p> <p>This upgrade will meet DPW's goal to modernize the user interface and sensor infrastructure for the Spreading Grounds and does not present any enterprise standards concerns due to the specialized nature of this type of system. The Department is encouraged to determine a long-term support strategy for its many telemetry systems, and DPW has indicated it is investigating consolidation of that maintenance under a single consultant or developing the expertise in-house for future support.</p>

Financial Analysis**BUDGET:****Contract costs****One-time costs:**

Hardware	\$ 126,567
Software	\$ 16,027
Services	\$ 539,406
Pool Dollars	\$ 68,000

Ongoing annual costs:

Hardware	\$ N/A
Software.....	\$ N/A
Services	\$ N/A
Sub-total Contract Costs:	\$ 750,000

Other County costs:**One-time costs:**

Hardware	\$ N/A
Software.....	\$ N/A
Services (ISD)	\$ N/A
County staff (existing)	\$ 150,000
County staff (net new)	\$ N/A

Sub-total one-time County costs:\$ 150,000**Ongoing annual costs:**

Hardware	\$ N/A
Software.....	\$ 6,410
Services (ISD).....	\$ N/A
Services (Consultant)	\$ N/A
County staff (existing)	\$ N/A
County staff (net new)	\$ N/A

Sub-total ongoing County costs:\$ 6,410**Total one-time costs: \$ 900,000****Total ongoing annual costs: \$ 6,410**

The full amount of the contract (not to exceed \$750,000), including approximately 10 percent for contingency, will be encumbered in the FY 2011-12 LACFCD Budget. In addition, there is a one-time County staff cost of \$150,000 related to contract administration, project management, and inspections that will also be paid by LACFCD. This project was identified in DPW's FY 2012-13 BAP albeit at lower cost. The Department has explained that scope changes—including change in telemetry radio technology and additional cost allotted for sensor replacements—and a low initial cost estimate in the BAP account for the higher than planned cost of this upgrade project.

Risk Analysis

RISK MITIGATION:

1. The upgrade activities will not affect water conservation efforts since DPW will continue to operate the Spreading Grounds manually, and the activities will not impact water intake.
2. Because the radio modems used for wireless telemetry are on the same licensed radio frequency used by the Rubber Dams SCADA system, the SGTS system will utilize Global Positioning System-enabled radios that will maintain precise timing to avoid communication conflicts with the nearby system.
3. The SGTS and Rubber Dams systems will utilize the same Wonderware interface, so the SGTS consultant will have to work closely with the Rubber Dams consultant for planning and integration. The SGTS consultant is considering sub-contracting some of the programming and integration tasks to the Rubber Dams contractor.
4. The Chief Information Security Officer (CISO) has reviewed the proposed SOW and did not identify any security issues. Further, the SOW calls for the consultant to provide the planned security configurations for all system components, which will be reviewed by the Departmental Information Security Officer—and if necessary, the CISO—for compliance with County and DPW security standards.

CIO Approval

PREPARED BY:


Eric Sasaki, Sr. Associate CIO6/4/12
Date

APPROVED:


Richard Sanchez, County CIO6-4-12
Date

Please contact the Office of the CIO (213.253.5600 or info@cio.lacounty.gov) for questions concerning this CIO Analysis. This document is also available online at <http://ciointranet.lacounty.gov/>

ENCLOSURE C

Bid Detail Information

Bid Number : AED7739764

Bid Title : Spreading Grounds Telemetry System Upgrade Services

Bid Type : Service

Department : Public Works

Commodity : CONSULTING SERVICES - COMPUTER SOFTWARE

Open Date : 11/21/2011

Closing Date : 12/22/2011 3:00 PM

Bid Amount : N/A

Bid Download : Not Available

Bid Description : The Department of Public Works is requesting proposals from qualified firms to provide spreading grounds telemetry system upgrade services for various locations in the County of Los Angeles. The consultant services include replacing the ARAMIS software with a modern industry standard Graphical User Interface (GUI) and database. Additionally, the project will replace the Geomation Measurement and Control Units (MCUs) with Siemens programmable logic controllers (PCLs) and appurtenances, which are industry standard.

In addition, the consultant may be required to perform as-needed trouble shooting services and/or repairs to the facilities such as wiring, conduit replacement, water level sensors, gate position sensors, battery power sensors, and any other existing appurtenances that are used with the upgraded telemetry system.

[Click here to access RFP](#)

Contact Name : Grace Stohs

Contact Phone# : (626) 979-5311 Ext: fax

Contact Email : gstohs@dpw.lacounty.gov

Last Changed On : 11/22/2011 8:42:45 AM

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